Colour Television **Chassis**

FM23 AC, FM24 AB, FM33 AA

Service
Service
Service

Service Manual

Contents **Page**

1 Technical Specifications, Connections, and Chassis Overview 2
2 Safety Instructions, Maintenance, Warnings, and Notes 5
3 Directions for Use 6
4 Mechanical Instructions 20
5 Service Modes, Error Codes, Fault Finding, and Repair Tips 24
6 *Block Diagrams, Testpoint Overview, and Waveforms*
Wiring Diagram (FM23 AC/FM24 AB) 31
Wiring Diagram (FM33 AA) 32
Block Diagram Video 33
Testpoint Overview: SCAVIO Panel 34
Block Diagram Audio 35
Testpoint Overview Audio Amplifier Panel 36
Block Diagram Power Supply (FM23 AC) 37
Testpoint Overview Power Supply (FM23 AC) 38
Block Diagram Power Supply (FM24/FM33) 39
Testpoint Overview: Power Supply (FM24 AB) 40
Testpoint Overview: Power Supply (FM33 AA) 41
Power Lines Overview (FM23 AC) 42
Power Lines Overview (FM24 AB/FM33 AA) 43
I2C-IC Overview (FM23/FM24/FM33) 44
7 *Circuit Diagrams and PWB layouts* *Diagram* *PWB*
Audio & Supply: DC Protection (Diagram A1) 45 52-53
Audio & Supply: Filters (Diagram A2) 46 52-53
Audio & Supply: Left High (Diagram A3) 47 52-53
Audio & Supply: Left Low (Diagram A4) 48 52-53
Audio & Supply: Right High (Diagram A5) 49 52-53
Audio & Supply: Right Low (Diagram A6) 50 52-53
Audio & Supply: Supply+DC Prot.(Diagram A7) 51 52-53
EMC Filter Panel (Diagr. EMC) 54 54
LED/Switch (Sets with Speakers) (Diagram LD) 55 56

Contents **Page**

LED/Switch (Speakerless sets) (Diagram LD) 57 58
Power Supply (FM23 AC) (Diagr. P1-P7) 59-65 66-72
Power Supply (FM24 AB) (Diagr. P1-P7) 73-79 80-86
Power Supply (FM33 AA) (Diagr. P1-P7) 87-93 94-98
SCAVIO: Function Blocks (Diagr. SC1) 99 114-119
SCAVIO: Sync Selection (Diagr. SC2) 100 114-119
SCAVIO: Video Selection (Diagr. SC3) 101 114-119
SCAVIO: Video ADC (Diagr. SC4) 102 114-119
SCAVIO: Video Select. Decoder (Diagr. SC5) 103 114-119
SCAVIO: VGA Input (Diagr. SC6) 104 114-119
SCAVIO: Control Functions 1 (Diagr. SC7) 105 114-119
SCAVIO: Control Functions 2 (Diagr. SC8) 106 114-119
SCAVIO: Scaler Clock Gen. (Diagr. SC9) 107 114-119
SCAVIO: PW Scaler + Memory (Diagr. SC10) 108 114-119
SCAVIO: Back-End EPLD (Diagr. SC11) 109 114-119
SCAVIO: Back-End LVDS Out (Diagr. SC12) 110 114-119
SCAVIO: Audio Source Select. (Diagr. SC13) 111 114-119
SCAVIO: Audio Processor (Diagr. SC14) 112 114-119
SCAVIO: Audio Delay Line (Diagr. SC15) 113 114-119
VGA Connector Panel (Diagr. VGA) 120 121-122
8 Electrical Alignments 123
9 Circuit Descriptions 126
List of Abbreviations 146
IC Data 148
10 Spare Parts List 152
11 Revision List 170

©Copyright 2003 Philips Consumer Electronics B.V. Eindhoven, The Netherlands. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.

Published by RB 0366 Service PaCE Printed in the Netherlands Subject to modification EN 3122 785 13890

1. Technical Specifications, Connections and Chassis Overview

Index of this chapter:
1. Technical Specifications
2. Connections
3. Chassis Overview

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

1.1 Technical Specifications

1.1.1 Picture

Display	:	FHT plasma panel
Screen sizes	:	32-inch (82 cm)
	:	37-inch (94 cm)
	:	42-inch (107 cm)
Resolution (pixels)	:	852(*3)x1024 (32")
	:	1024(*3)x1024 (37")
	:	1024(*3)x1024 (42")
Contrast ratio	:	400 : 1
Light output	:	600 cd/m^2
Viewing angle	:	160 deg (H)
	:	160 deg (V)

1.1.2 Sound

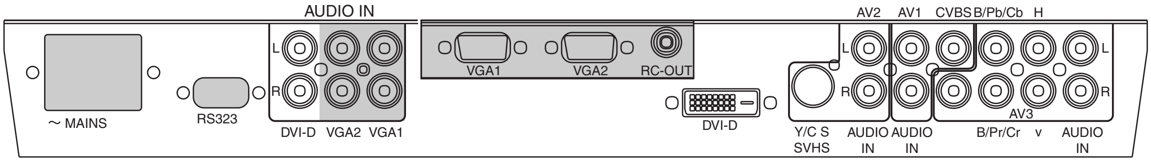
Maximum power	:	30 W_rms

1.1.3 Miscellaneous

Mains voltage	:	95 - 264 V
Mains frequency	:	50 / 60 Hz
Ambient temperature	:	+ 5 to + 40 deg. C
Maximum humidity	:	90 % R.H.
Power dissipation	:	≈ 280 W (32")
	:	≈ 300 W (37")
	:	≈ 380 W (42")
Standby Power dissipation	:	< 3 W
Weight	:	24 kg (32-inch)
	:	30 kg (37-inch)
	:	36 kg (42-inch)
Dimens. (WxHxD) in mm	:	964x512x89 (32")
	:	1060x580x90 (37")
	:	1210x660x90 (42")

1.2 Connections

1.2.1 Rear Connections



▨ ! All Functional blocks shaded grey are required for the"Basic Configuration".
The remainder is required for the "Enhanced Configuration".

CL 16532099_010.eps
260801

Figure 1-1 Rear View

RS232

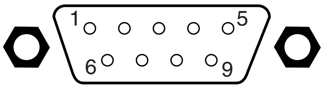


Figure 1-2 RS232 Connector

1	-		
2	- TXD	(UART)	⊙→
3	- RXD	(UART)	→⊙
4	- RL_ICN	(ICONN)	→⊙
5	-	Ground	⏚
6	- GL_ICN	(ICONN)	⊙→
7	- LD_ICN	(ICONN)	⊙→
8	- IR_TX	(ICONN)	⊙→
9	- IR_RX	(ICONN)	→⊙
10	-	Ground	⏚
11	-	Ground	⏚

Audio - In (DVI-D) *

-	- Audio - L	0.5 V_rms / 1 kohm	→⊙◎
-	- Audio - R	0.5 V_rms / 1 kohm	→⊙◎

Audio - In (VGA2)

-	- Audio - L	0.5 V_rms / 1 kohm	→⊙◎
-	- Audio - R	0.5 V_rms / 1 kohm	→⊙◎

Audio - In (VGA1)

-	- Audio - L	0.5 V_rms / 1 kohm	→⊙◎
-	- Audio - R	0.5 V_rms / 1 kohm	→⊙◎

VGA1 - In

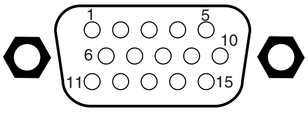


Figure 1-3 VGA Connector

1	- Red	0.7 V_pp / 75 ohm	→⊙
2	- Green	0.7 V_pp / 75 ohm	→⊙
3	- Blue	0.7 V_pp / 75 ohm	→⊙
4	- TXD		⊙→
5	-	Ground	⏚
6	- Red	Ground	⏚
7	- Green	Ground	⏚
8	- Blue	Ground	⏚
9	- RC		⊙→
10	-	Ground	⏚
11	- RXD		→⊙
12	- DDC_SDA		→⊙
13	- H-sync	0 - 5 V	→⊙
14	- V-sync	0 - 5 V	→⊙

15 - DDC_SCL		⊕

VGA2 - Out

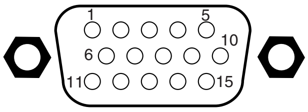


Figure 1-4 VGA Connector

1 - Red	(0.7 V_pp/75 ohm)	⊖▸⊕
2 - Green	(0.7 V_pp/75 ohm)	⊖▸⊕
3 - Blue	(0.7 V_pp/75 ohm)	⊖▸⊕
4 - TXD		⊖▸
5 -	Ground	⏚
6 - Red	Ground	⏚
7 - Green	Ground	⏚
8 - Blue	Ground	⏚
9 -		
10 -	Ground	⏚
11 - RXD		⊕
12 - DDC_SDA		⊕
13 - H-sync	0 - 5 V	⊖▸⊕
14 - V-sync	0 - 5 V	⊖▸⊕
15 - DDC_SCL		⊕

RC - Out

- - RC		⊖▸◎

*DVI-D **

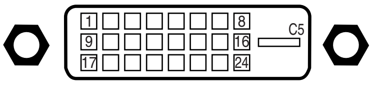


Figure 1-5 DVI-D Connector

1 - RX2-		⊕
2 - RX2+		⊕
3 -	Ground	⏚
4 -		
5 -		
6 - DDC-SCL		⊖▸
7 - DDC-SDA		⊖▸
8 -		
9 - RX1-		⊕
10 - RX1+		⊕
11 -	Ground	⏚
12 -		
13 -		
14 - 5V_STBY_SW		
15 -	Ground	⏚
16 - 5V_STBY_SW		
17 - RX0-		⊕
18 - RX0+		⊕
19 -	Ground	⏚
20 -		
21 -	Ground	⏚
22 -		
23 - RXC+		⊕
24 - RXC-		⊕
C5-	Ground	⏚

*AV2: SVHS - In **

1 - Y	Ground	⏚
2 - C	Ground	⏚
3 - Y	1 V_pp / 75 ohm	⊕
4 - C / 16:9	0.3 V_pp / 75 ohm	⊕

*AV2: Audio - In **

- - Audio - L	0.5 V_rms/10 kohm	⊕◎
- - Audio - R	0.5 V_rms/10 kohm	⊕◎

*AV1: Audio/Video - In **

- - CVBS	1 V_pp / 75 ohm	⊕◎
- - Audio - L	0.5 V_rms / 10 kohm	⊕◎
- - Audio - R	0.5 V_rms / 10 kohm	⊕◎

*AV3: Audio/Video - In **

- - G/Y/Y	0.7 V_pp / 75 ohm	⊕◎
- - B/Pb/Cb	0.7 V_pp / 75 ohm	⊕◎
- - R/Pr/Cr	0.7 V_pp / 75 ohm	⊕◎
- - H		⊕◎
- - V		⊕◎
- - Audio - L	0.5 V_rms / 10 kohm	⊕◎
- - Audio - R	0.5 V_rms / 10 kohm	⊕◎

(*) Only available in the *Enhanced* version.

1.3 Chassis Overview

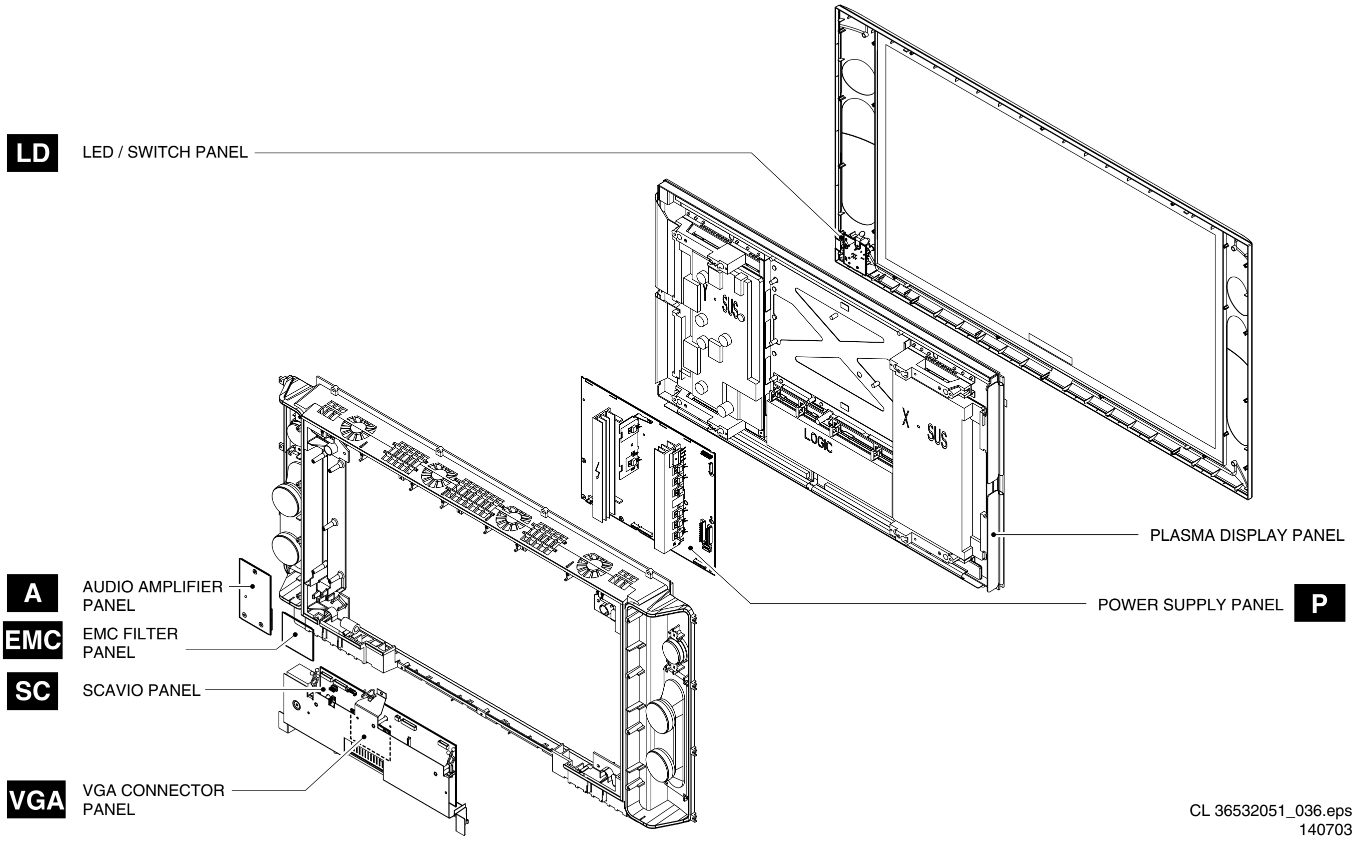

LD
LED / SWITCH PANEL
PLASMA DISPLAY PANEL
Y - SUS
X - SUS
LOGIC
POWER SUPPLY PANEL
P
A
AUDIO AMPLIFIER PANEL
EMC
EMC FILTER PANEL
SC
SCAVIO PANEL
VGA
VGA CONNECTOR PANEL
CL 36532051_036.eps
140703

Figure 1-6 PWB Location

2. Safety Instructions, Warnings, and Notes

2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the mains via an isolation transformer (= 800 VA).
- Do not operate the monitor without the front glass plate. One function of this glass plate is to absorb IR radiation. Without this glass plate, the level of radiation could damage your eyes.
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay, in particular, attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the mains lead for external damage.
- Check the electrical DC resistance between the mains plug and the secondary side (only for sets which have a mains isolated power supply):
  1. Unplug the mains cord and connect a wire between the two pins of the mains plug.
  2. Set the mains switch to the "on" position (keep the mains cord unplugged!).
  3. Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the mains plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

- Clean the glass plate in front of the plasma display with a slightly humid cloth. If, due to circumstances, there is some dirt between the glass plate and the plasma display, this must be cleaned by a qualified service engineer (see chapter 4).
- Measure the direct voltages and oscillograms with regard to the chassis ground (⏚), or hot ground (⏚) as this is called.
- The direct voltages and oscillograms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5).
- Where necessary, measure the voltages in the power supply section both in normal operation (⏼) and in standby (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

2.3.1 Schematic Notes

- All resistor values are in ohms and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are expressed in micro-farads (μ= x10^-6), Nano-Farads (n= x10^-9), or pico-farads (p= x10^-12).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Electrical Replacement Parts List. Therefore, always check this list when there is any doubt.

2.3.2 Rework on BGA (Ball Grid Array) ICs

General
Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

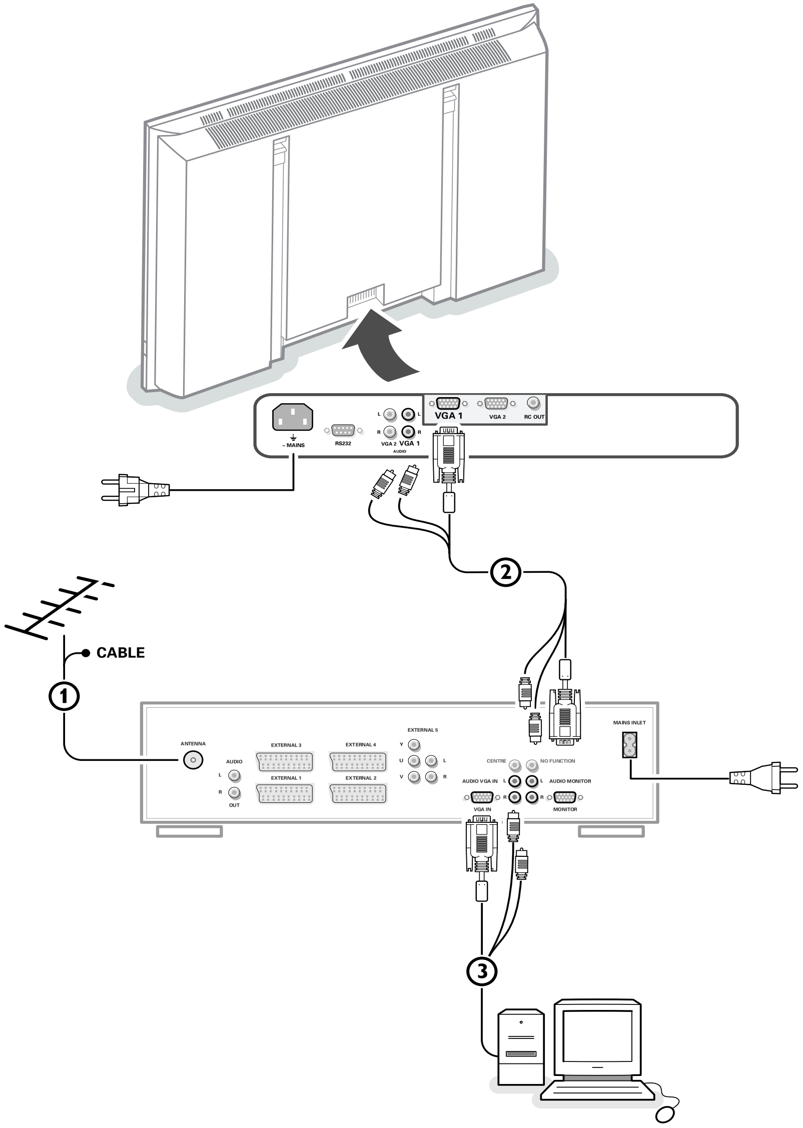
Device removal
As is the case with any component, it is essential when removing an (LF)BGA, that the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.
To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area preparation
When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.
After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.
To reflow the solder, apply a temperature profile according to the *IC data sheet*. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

3. Directions for Use

3.1 Basic



Unpacking and wall mounting instructions

For the unpacking instructions follow the illustrated steps printed on the packaging (outside and inside). For the wall mounting instructions follow the illustrated steps ❹ to ❻ printed on the separate leaflet.

Make sure that the wall mount is being fixed securely enough so that it meets safety standards. The weight of the monitor (excl. packaging) is about 24 kg (32"), 30 kg (37") and 35,5 kg (42").

Note: Stands are optional accessories. Consult your dealer.

Connect your electronic receiver box
See the separate supplied instruction manual with your receiver box.

Connect your computer

To the receiver box

See the illustration in the inside frontcover of this handbook.

❶ Connect one end of a VGA cable to the video card of the computer and the other end to the **VGA IN** connector at the rear side of the receiver box. Fix the connectors firmly with the screws on the plug.

❷ In case of a Multimedia computer, connect the audio cable to the audio outputs of your Multimedia computer and to the **AUDIO VGA R** (right) and **L** (left) inputs of the receiver box.

Directly to the monitor

❶ Connect one end of a VGA cable ① to the video card of the computer and the other end to the **VGA 1** connector at the rear side of the monitor. Fix the connectors firmly with the screws on the plug.

❷ In case of a Multimedia computer, connect the audio cable ② to the audio outputs of your Multimedia computer and to the **AUDIO VGA 1 R** (right) and **L** (left) inputs of the monitor.

Daisy chaining

The Loop Through facility makes it possible to make a daisy chain with a second monitor.

❸ Connect one end of another VGA cable to the **VGA 2** connector at the rear side of the monitor and the other end to the **VGA 1** connector of a second monitor.

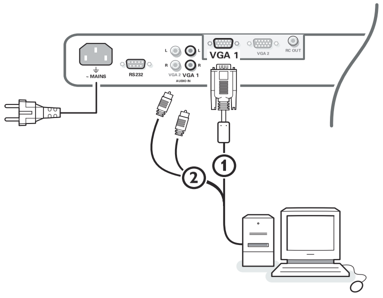
❹ In case of a Multimedia computer, also connect audio cables to the **AUDIO L** and **R** outputs of the original monitor and to the **AUDIO L** and **R** inputs of the second monitor.

The RC out jack next to the VGA 2 connector makes it possible to daisy chain remote control signals to other equipment. This output cannot be used to daisy chain a second monitor.

Serial I/O port RS232

The RS232 connector is only to be used with the monitor as stand alone.
This connector allows you to control the monitor via your PC (as a replacement of the remote control).

Note: This connector can also be used for dealer service tools.



Monitor Display modes

VGA	640x480	60, 72, 75, 85 Hz
Wide VGA	848x480	60 Hz
Wide VGA	852x480	60 Hz
MAC	640x480	66.67 Hz
MAC	832x624	74.55 Hz
MAC	1024x768	74.93 Hz
MAC	1152x870	75 Hz
SVGA	800x600	56, 60, 72, 75, 85 Hz
XGA	1024x768	60, 70, 75, 85 Hz
SXGA	1280x1024	60, 72 Hz

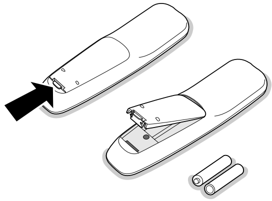
When a VGA computer is connected, the display selection is made automatically.

A message is displayed when the monitor does not support the connected VGA mode. Switch your computer to a correct display mode.

Operation

❶ **Insert the mains plug** supplied into the mains inlet at the back of the monitor and in the wall socket.
For safety, please, only use the supplied rim-earthed mains cord which has to be inserted in a grounded socket.

❷ **Remote control:** remove the cover of the battery compartment.
Insert the 2 batteries supplied (Type R6/AA-1.5V).

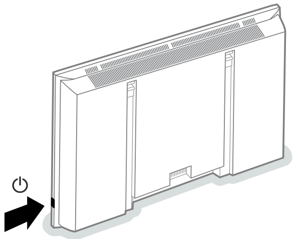


R6 / AA

The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries batteries may not be disposed of with your household waste. Please check on how to dispose of batteries according to local regulations.

❸ Make sure that your electronic receiver box and/or PC are switched on and that your PC is in the correct display mode.

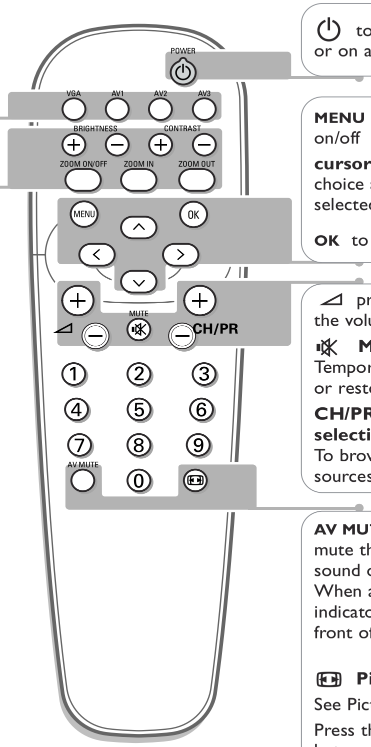
❹ **Switch the monitor on :** Press the on/off key ⏻ at the right side of the monitor.
A green indicator lights up and the screen comes on.



When the monitor does not receive a supported VGA signal and is not connected to a receiver box, the screen switches to standby and the red indicator lights up.

When you switch on your monitor **for the first time**, and the monitor is not connected to an electronic receiver box, the language menu automatically appears on the screen. The explanation appears in different languages one at a time.
Follow the instructions on screen to select the correct language or see Setup menu, Language, p. 5.

Use of the remote control



VGA to select your computer connected to the **VGA 1** connector

AV1, **AV2**, **AV3** no function

BRIGHTNESS +/-
to adjust the brightness level of the picture

CONTRAST +/-
to adjust the contrast level of the picture

ZOOM ON/OFF to activate/de-activate the zoom function. See p. 4.

ZOOM IN/OUT to adjust the zoom factor and to change the magnification of the picture when zoom is activated. See p. 4.

⏻ to switch to standby or on again

MENU to switch the menu on/off

cursor keys to select your choice and to alter a selected adjustment.

OK to activate your choice

◿ press - or + to adjust the volume

🔇 **Mute key**
Temporarily mute the sound or restore it

CH/PR Programme selection
To browse through the sources selected.

AV MUTE to temporarily mute the picture and the sound or restore it.
When activated a yellow indicator starts blinking in front of the monitor.

▣ **Picture format**
See Picture 2 menu, p. 4.

Press the ▣ key to switch between the different picture formats.

If your monitor no longer responds to the remote control, the batteries may be exhausted.

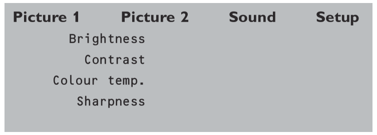
How to dispose of batteries ?

The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries batteries may not be disposed of with your household waste. Please ensure you dispose of batteries according to local regulations.

End of life directives

Philips is paying a lot of attention to produce environmentally-friendly in green focal areas. Your new monitor contains materials which can be recycled and reused.
At the end of its life specialised companies can dismantle the discarded monitor to concentrate the reusable materials and to minimise the amount of materials to be disposed of.
Please ensure you dispose of your old monitor according to local regulations.

Use of the menus and the menu system



```
Picture 1     Picture 2     Sound     Setup
      Brightness
        Contrast
    Colour temp.
       Sharpness
```

❶ Press the **MENU** key on the remote control to summon the different menu headers.

❷ Press the cursor left/right to move the cursor horizontally through the menu headers.

❸ Press the cursor down to access the menu.
In case of a slider, move the cursor left/right to adjust.
In case of a list with options, move the cursor right to enter and use the cursor up/down to select an option.
Press the cursor left to leave the options list.

❹ Press the **MENU** key again to switch off the menu.

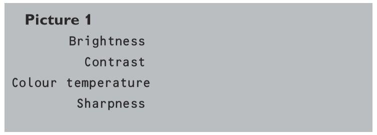
Note: Sometimes not all the menu items are visible on the screen.
Press the cursor down until all the items are displayed.

Only when the US English language has been selected (see Setup menu,
Language, p. 5), the menu items will be displayed with additional icons.

Operation

Press the **MENU** key on the remote control to summon the main menu.

Picture 1 menu



```
 Picture 1
      Brightness
        Contrast
Colour temperature
       Sharpness
```

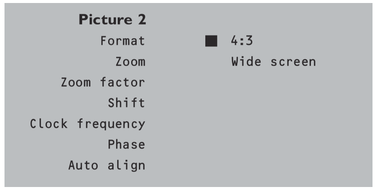
Brightness
This control allows you to adjust the brightness level of the picture.

Contrast
This control allows you to adjust the contrast level of the picture.

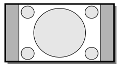
Colour temperature
This control allows you to select the colour temperature of the picture.
Move the cursor up/down to make a selection.
Press the cursor left to return to the Picture 1 menu.

Sharpness
This control allows you to adjust the edge definition of a picture.

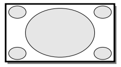
Picture 2 menu



```
      Picture 2
         Format     ■ 4:3
           Zoom       Wide screen
    Zoom factor
          Shift
Clock frequency
          Phase
     Auto align
```



4:3



Wide screen

In this menu you are allowed to adjust attributes which are relevant for the picture on the display, like format, zoom, size, etc.

Format
Select **Format** to summon a list of **available** display formats for showing images in the traditional 4:3 proportions.
Press the cursor up/down to select another display format: 4:3 or Wide screen.

Zoom
Select **Zoom On** to activate the zoom function.
You may also activate the zoom function with the **ZOOM ON/OFF** key on the remote control.
Press the cursor left/right, up/down to select which part of the screen will be zoomed.

Zoom factor
Select **Zoom factor** and press the cursor left/right to adjust the zoom factor and to change the magnification of the picture.
If zoom is not active, Zoom Off, changing the magnification factor will have no effect on the displayed picture.

Shift
This control allows you, when necessary, to move the picture in a horizontal or vertical way.

❶ Use the cursor left/right to adjust.

❷ Press the **OK** key when done.

Clock frequency

This control allows you, when necessary, to adjust the values of the clock frequency so that especially text can be displayed with an optimal overall sharpness.

Use the cursor left/right to adjust.

Phase

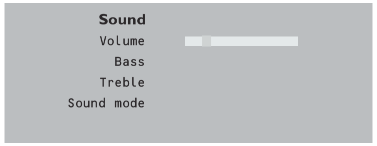
This control allows you, when necessary, to adjust the pixel phase of the picture to avoid picture interference.

Use the cursor left/right to adjust.

Auto align

This control allows you to automatically adjust the shift, the clock frequency and the phase in VGA mode.
Press **OK** to execute.

Sound menu



```
     Sound
    Volume
      Bass
    Treble
Sound mode
```

Volume
This control allows you to adjust the volume level.

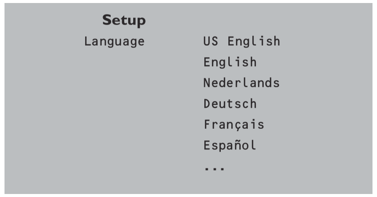
Bass
Bass attenuates or amplifies the low-frequency response of the sound of the loudspeakers.

Treble
Treble attenuates or amplifies the high-frequency response of the sound of the loudspeakers.

Sound mode
This control allows you to switch between mono and stereo sound.

Note: Bass, Treble and Sound mode will not be available when an electronic receiver
box is connected to the monitor and a VGA source is selected.

Setup menu



```
   Setup
Language     US English
             English
             Nederlands
             Deutsch
             Français
             Español
             ...
```

❶ Use the cursor down to select **Language**.

❷ Press the cursor right to enter the list of

selectable languages.

❸ Use the cursor up/down to scroll through the list and to bring up other languages which are not displayed on the screen at present.

Tips

Ambient temperature

Do not hang up the monitor above a central heating or other heating sources.

Care of the screen

Clean the anti-reflex coated flat glass screen with a slightly damp soft cloth. Do not use abrasives solvents as it can damage the glass surface of the screen.

Plasma Display characteristics

Caution: A video source (such as a video game, DVD, or video information channel) which shows a constant non-moving pattern on the screen, can cause damage to the screen. When your Flat-Monitor is continuously used with such a source, the pattern of the non-moving portion of the game (DVD, etc.) could leave an image permanently on the screen. When not in use, turn the video source **OFF**.
Regularly alternate the use of such video sources with normal viewing.
When switching over to another picture after having displayed the same still picture for a long time (many hours), it may happen that some parts from the previous picture will remain on screen due to a kind of memory effect. This ghost picture will disappear after some time. To avoid this effect change the pictures regularly or for PC use you can turn on a screen saver in your computer.
For video signals, Philips has built in an automatic shift of the picture every 5 minutes to avoid this effect and to prolong the life of the screen.
Very incidentally and after a longer period of unuse (approx. 1 year) the screen may display some strange colour deficiencies. This is quite normal for plasma displays and these effects will disappear after the set has been turned on for some time.
A plasma display consists of a huge amount of colour pixels. It is within industry standards that very few pixels (< 0.001%) may be defective, even for a new set. There is however no reason to doubt about the quality of the set.
The plasma display technology operates with rare gases which are being influenced by air pressure.

Up to an altitude of 2000 m above sea-level (local air pressure equal or above 800 hPa), the display is functioning fine.
Operating the set at a higher altitude (lower air pressure), the picture becomes unstable and the picture performance is deteriorating. The plasma display might then also produce a humming sound. After bringing the set below 2000 m (local air pressure equal or above 800 hPa) it works fine again. Transportation has no influence.

Control of peripheral equipment

The infrared signals of the screen may influence the reception sensitivity of other peripherals.
Solution: replace the batteries of the remote control or change position of other equipment. E.g. keep away a wireless headphone from within a radius of 1.5 m.

No stable or not synchronised VGA picture

Check if you have selected the correct VGA mode in your PC.

No picture or no sound

Are the supplied cables connected properly? (The power cable to the display, the VGA cables, the audio cables,...)
Is your PC or receiver box switched on?
Do you see a black screen and the indicator on front of the monitor lights up green, this means that the display mode is not supported.
Switch your VGA source to a correct mode.

If your problem is not solved: Switch your monitor off and then on again.
Never attempt to repair a defective monitor yourself. Check with your dealer or call a video technician.

Transport

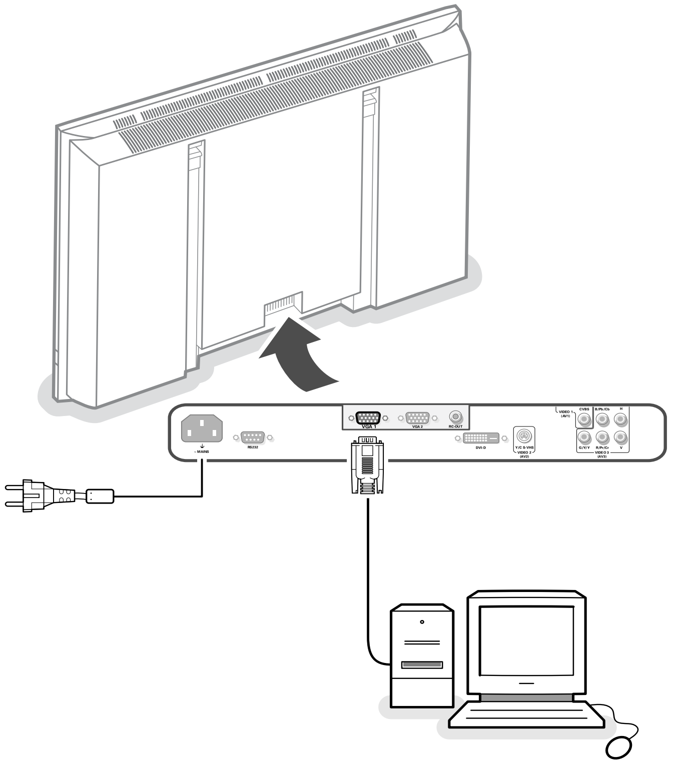
Keep the original packaging to transport the monitor if needed.

Miscellaneous

. Ambient temperature:
  + 5 ~ + 40°C
. Maximum operating altitude:
  2000 m (min. air pressure
  800 hPa)
. Mains: Auto Voltage ranging from
  95V to 264V 50Hz/60Hz
. Power consumption:
  around 280 W (32”),
  300 W (37”), 380 W (42”)
. Standby consumption: < 2 W
. Weight (excl. packaging)
  Display: 24 kg (32”),
  30 kg (37”),
  35,5 kg (42”)
. Dimensions (wxhxd):
  Display:
  96.4 x 51.2 x 8.9 cm (32”)
  106 x 58 x 9 cm (37”)
  121 x 66 x 9cm (42”)
. Wall mounting bracket included

Personal Notes:

3.2 Speakerless



Unpacking and wall mounting instructions

For the unpacking instructions follow the illustrated steps printed on the packaging (outside and inside). For the wall mounting instructions follow the illustrated steps ④ to ⑥ printed on the separate template.

Make sure that the wall mount is being fixed securely enough so that it meets safety standards. The weight of the monitor (excl. packaging) is about 35 kg.

Note: Stands are optional accessories. Consult your dealer.

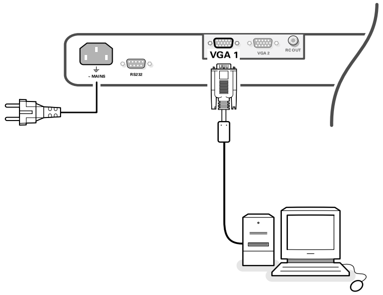
Connect your computer

Directly to the monitor

① Connect one end of a VGA cable to the video card of the computer and the other end to the **VGA 1** connector at the rear side of the monitor. Fix the connectors firmly with the screws on the plug.

② In case of a multimedia computer, connect the audio cable to the audio outputs of your multimedia computer and to the audio inputs of your external amplifier.

VGA 2: The video connector for VGA 2 can be programmed to become an input or an output via the Setup menu, see p. 6. The function of being input or output is determined by the used mode. If the monitor is used in video mode, the VGA 2 connector is VGA output. If the monitor is used in monitor mode, the connector is VGA input or output.



To an electronic receiver box

See the handbook of the receiver box.

① Connect one end of a VGA cable to the video card of the computer and the other end to the **PC/MAC IN** connector at the rear side of the receiver box. Fix the connectors firmly with the screws on the plug.

② In case of a Multimedia computer, connect the audio cable to the audio outputs of your Multimedia computer and to the **AUDIO IN R** and **L** inputs of the receiver box. For sound reproduction, connect your external amplifier to the receiver box.

Note: Only use the VGA cable supplied with the monitor.

Daisy chaining

The Loop Through facility makes it possible to make a daisy chain with a second monitor.

Connect one end of another VGA cable to the **VGA 2** connector at the rear side of the monitor and the other end to the **VGA 1** connector of a second monitor.

Note: The RC out jack next to the VGA 2 connector makes it possible to daisy chain remote control signals to other equipment. This output cannot be used to daisy chain a second monitor.

Computer Display modes

VGA	640x480	60, 72, 75, 85 Hz
Wide VGA	848x480	60 Hz
Wide VGA	852x480	60 Hz
MAC	640x480	66.67 Hz
MAC	832x624	74.55 Hz
MAC	1024x768	74.93 Hz
MAC	1152x870	75 Hz
SVGA	800x600	56, 60, 72, 75, 85 Hz
XGA	1024x768	60, 70, 75, 85 Hz
SXGA	1280x1024	60, 72 Hz (not with DVI-D-source)

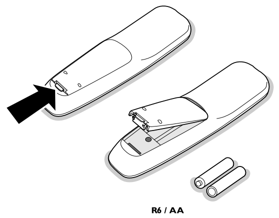
When a VGA computer is connected, the display selection is made automatically.

A message is displayed when the monitor does not support the connected VGA mode. Switch your computer to a correct display mode.

Operation

❶ **Insert the mains plug** supplied into the mains inlet at the back of the monitor and in the wall socket. Please, only use the supplied rim-earthed mains cord which has to be inserted in a grounded socket.

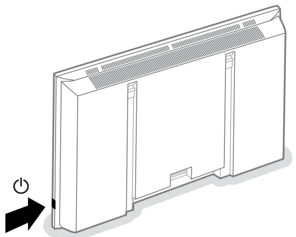
❷ Remote control: remove the cover of the battery compartment.
Insert the 2 batteries supplied (Type LR6/AA-1.5V).



The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries batteries may not be disposed of with your household waste. Please check on how to dispose of batteries according to local regulations.

❸ Make sure that your receiver box and/or PC are switched on and that your PC is in the correct display mode.

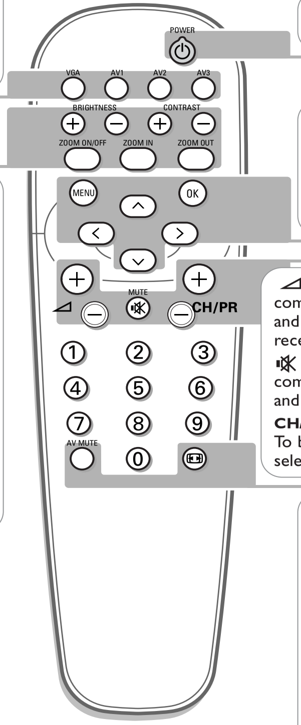
❹ **Switch the monitor on** : Press the power button ⏻ at the right side of the monitor. A green indicator lights up and the screen comes on.



When the monitor does not receive a supported VGA signal and is not connected to a receiver box the screen switches to standby and the red indicator lights up.

When you switch on your monitor for the first time, and the monitor is not connected to a receiver box, the menu language automatically appears on the screen. The explanation appears in different languages one at a time.
Follow the instructions on screen to select the correct language or see Setup menu, Language, p. 6.

Use of the remote control



VGA
press repeatedly to select your computer connected to the **VGA 1** or **2** connector or to the **DVI-D** connector.

AV1, AV2, AV3
press to select the peripherals connected to the connector indicated on the monitor.

BRIGHTNESS +/-
to adjust the brightness level of the picture

CONTRAST +/-
to adjust the contrast level of the picture

ZOOM ON/OFF
to activate/de-activate the zoom function.
See p. 5.

ZOOM IN/OUT
to adjust the zoom factor and to change the magnification of the picture when zoom is activated. See p. 5.

⏻ to switch to standby or on again

MENU to switch the menu on/off

cursor buttons to select your choice and to alter a selected adjustment.

OK to activate your choice

◿ no function (except when in combination with a receiver box and a Home Cinema audio receiver)

🔇 no function (except when in combination with a receiver box and a Home Cinema audio receiver)

CH/PR Program selection
To browse through the sources selected.

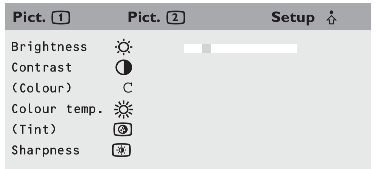
AV MUTE to mute the picture or restore it (if the monitor is used in monitor mode).
When activated a green indicator starts blinking in front of the monitor.

▣ **Picture format**
See Picture 2 menu, p. 5.
Press the ▣ key to switch between the different picture formats.

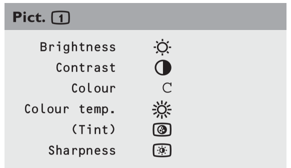
On screen information

When the monitor is used in the monitor mode, information about the active source (**AV1, AV2, AV3, VGA1, VGA2** or **DVI-D**) and the supported video, VGA or HD-format of the selected source is displayed on the screen together with the selected picture format and icons informing about AV mute.

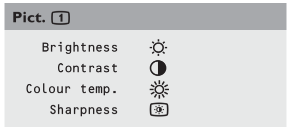
Use of the menus and the menu system


Pict. 1
Pict. 2
Setup
Brightness
Contrast
(Colour)
Colour temp.
(Tint)
Sharpness

SD video-mode


Pict. 1
Brightness
Contrast
Colour
Colour temp.
(Tint)
Sharpness

VGA-mode + HD video mode


Pict. 1
Brightness
Contrast
Colour temp.
Sharpness

❶ Press the **MENU** key on the remote control to summon the different menu headers.

❷ Press the cursor left/right to move the cursor horizontally through the menu headers.

❸ Press the cursor down to access the menu. In case of a slider, move the cursor left/right to adjust.

In case of a list with options, move the cursor right to enter and use the cursor up/down to select an option.
Press the cursor left to leave the options list.

❹ Press the **MENU** key again to switch off the menu.

Note: Sometimes not all the menu items are visible on the screen.
Press the cursor down until all the items are displayed.

Only when the US English language has been selected (see Setup menu,
Language, p. 6), the menu items will be displayed with additional icons.

Operation

Press the **MENU** key on the remote control to sun the main menu.

Picture 1 menu

Brightness
This control allows you to adjust the brightness level of the picture.

Contrast
This control allows you to adjust the contrast level of the picture.

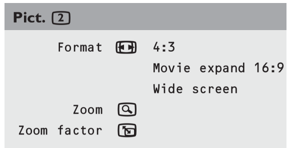
Colour *(only available when the source is **AV1**, **AV2** or **AV3 YCbCr**)*
This control allows you to adjust the saturation level of the colours to suit your personal preference.

Colour temperature
This control allows you to select the Colour temperature of the picture.
Move the cursor up/down to make a selection.
Press the cursor left to return to the Picture 1 menu.

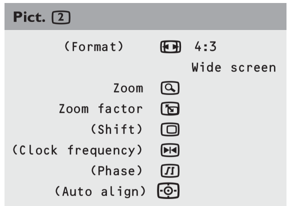
Tint *(only with NTSC signals and when the source is **AV1** or **AV2**)*
This control allows you to compensate for the Colour variations in NTSC encoded transmissions.

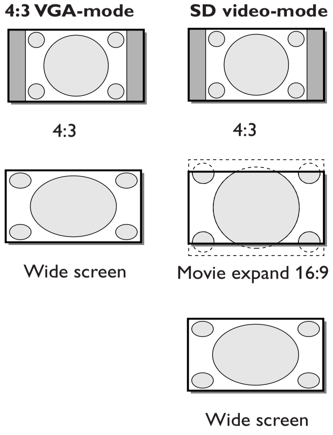
Sharpness
This control allows you to adjust the edge definition of a picture.

SD video-mode


Pict. 2
Format
4:3
Movie expand 16:9
Wide screen
Zoom
Zoom factor

VGA-mode + HD video mode


Pict. 2
(Format)
4:3
Wide screen
Zoom
Zoom factor
(Shift)
(Clock frequency)
(Phase)
(Auto align)


4:3 VGA-mode
SD video-mode
4:3
4:3
Wide screen
Movie expand 16:9
Wide screen

Picture 2 menu

Format *(only available in 4:3 VGA mode and SD video mode)*
Select **Format** to summon a list of **available** display formats.
Press the cursor up/down to select another display format: 4:3, Movie Expand 16:9 or Wide screen.

Note: Movie Expand 16:9 is not available in VGA mode.

Zoom
Select **Zoom On** to activate the zoom function. You may also activate the zoom function with the **ZOOM ON/OFF** key on the remote control.
If no zoom is active, press the cursor left/right, up/down to select which part of the screen will be zoomed.

Zoom factor
Select **Zoom factor** and press the cursor left/right to adjust the zoom factor and to change the magnification of the picture.
If zoom is not active changing the magnification factor will have no effect on the displayed picture.

Shift *(only available in VGA mode on VGA 1 or VGA 2 and in one of the HD modes. See Connect Peripheral equipment, p. 7.)*

This control allows you, when necessary, to move the picture in a horizontal or vertical way.

❶ Use the cursor left/right, up/down to adjust.

❷ Press the **OK** key when done.

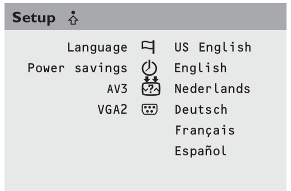
Clock frequency *(only available in VGA mode on VGA 1 or VGA 2. See Connect Peripheral equipment, p. 7.)*
This control allows you, when necessary, to adjust the values of the clock frequency so that especially text can be displayed with an optimal overall sharpness.
Use the cursor left/right to adjust.

Phase *(only available in VGA mode on VGA 1 or VGA 2. See Connect Peripheral equipment, p. 7.)*

This control allows you, when necessary, to adjust the pixel phase of the picture to avoid picture interference.
Use the cursor left/right to adjust.

Auto align *(only available in VGA mode on VGA1 or VGA2 and in one of the HD modes. See Connect Peripheral Equipment, p. 7.)*

This control allows you to automatically adjust the shift, the clock frequency and the phase in VGA mode and the shift in HD modes.
Press **OK** to execute.



Setup

Language	⊏	US English
Power savings	⏻	English
AV3		Nederlands
VGA2		Deutsch
		Français
		Español

Setup menu

Language

1. Use the cursor down to select **Language**.
2. Press the cursor right to enter the list of selectable languages.
3. Use the cursor up/down to scroll through the list and to bring up other languages which are not displayed on the screen at present.
   Note: Only with the US English language, the menu items will be displayed with additional icons.

Power savings

This control allows you to overrule the automatic power savings feature.
In case **Power savings** is switched **Off**, the power always remains on until the monitor is forced to standby.

1. Use the cursor down to select **Power savings**.
2. Press the cursor left/right to select **On** or **Off**.

AV3

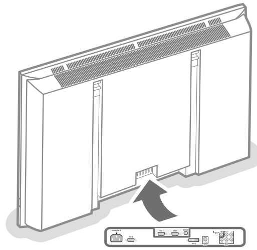
This control allows you to set the **AV3** input to HD-RGB, YCbCr or HD-YPbPr. When having selected **Auto**, the monitor makes the selection automatically between YCbCr, HD-YPbPr or HD-RGB.
See also p. 7, Equipment with Component Video Output connectors.

1. Use the cursor down to select **AV3**.
2. Press the cursor right to enter the list with options.
3. Press the cursor up/down to select one of the options.

VGA 2

This control allows you to select whether to set the VGA 2 connector as input, output or even HD-input.

1. Use the cursor down to select **VGA 2**.
2. Press the cursor right to enter the list with options: **VGA IN, VGA OUT** or **HD IN.**
3. Press the cursor up/down to select one of the options.
   Note: AV3 and VGA 2 will not be available in VGA loop through mode, i.e. when a receiver box is connected to the monitor and a VGA source is selected.

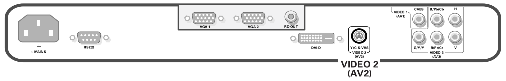


Connect Peripheral Equipment

You may connect 3 possible VGA sources (**VGA 1**, **VGA 2** or **DVI-D**) and 3 possible video sources (**VIDEO 1 (AV1)**, **VIDEO 2 (AV2)** and **VIDEO 3 (AV3)**) to the monitor.
The following diagrams show you where you can connect your peripheral equipment.

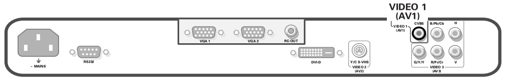
Note: in case the monitor is operating in combination with a receiver box, the VGA and video inputs on the monitor will be disabled and the VGA 2 connector becomes an output.

Equipment with Y/C-SVHS output connectors



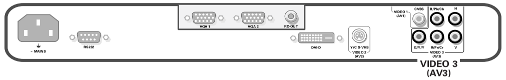
Connect the video cable to the **Y/C S-VHS VIDEO 2 (AV2)** connector.

Equipment with CVBS output connectors



Connect the video cable to the **CVBS VIDEO 1 (AV1)** connector.

Equipment with Component Video Output connectors



Note: VIDEO 3 (AV3) can handle the following video signals: YCbCr, HD-PbPr and HD-RGB. The discrimination between the various input formats and the appropriate video processing is done automatically. It is however possible to overrule the automatic detection. See Setup menu, p. 6.

1. Connect the video cables of your equipment with YPbPr output with composite sync on Y, or of your equipment with YCbCr output with composite sync on Y to the YPbPr, resp. YCbCr input **VIDEO 3 (AV3) IN** sockets of the monitor.
2. Connect the video cables of your equipment with RGB output with separate Horizontal and Vertical sync to the RGB input sockets and to the H and V sockets **VIDEO 3 (AV3)** of the monitor.

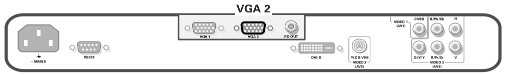
Note: when High Definition signals are inputted to the monitor via the YPbPr/RGB input, the monitor switches to the HD Video Mode.
The following HD and ED video modes are supported by the monitor on the YPbPr, RGB and VGA 2 HD input:

1920x1080/60I 720x480/60P
1280x720/60P 720x576/50P

The following SD video modes are supported by the monitor on the YCbCr input:

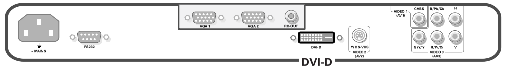
720x480/60I
720x576/50I

High Definition equipment with VGA connector



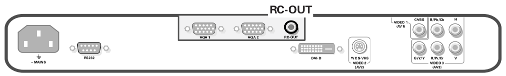
Connect the VGA output of your equipment to the **VGA2** connector.

Digital DVI output of your PC (DVI-D)



Connect the Digital DVI output of your PC to the **DVI-D** connector.

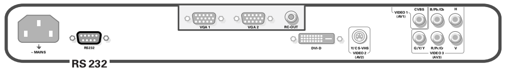
RC out connector



This connector allows you to daisy chain remote control signals to other equipment (e.g. AV receiver, IR repeater) which have an electrical RC in.

Note: it is not possible to daisy chain a second monitor.

Serial I/O port RS232



The RS232 connector is only to be used with the monitor as stand alone.
This connector allows you to control the monitor via your PC (as a replacement of the remote control).

Note: This connector can also be used for dealer service tools.

Tips

Ambient temperature
Do not hang up the monitor above a central heating or other heating sources.

Care of the screen
Clean the anti-reflex coated flat glass screen with a slightly damp soft cloth. Do not use abrasives solvents as it can damage the glass surface of the screen.

Plasma Display characteristics
Caution: A video source (such as a video game, DVD, or video information channel) which shows a constant non-moving pattern on the monitor screen, can cause damage to the screen. When your Flat-Monitor is continuously used with such a source, the pattern of the non-moving portion of the game (DVD, etc.) could leave an image permanently on the screen. When not in use, turn the video source **OFF**.
Regularly alternate the use of such video sources with normal viewing.
When switching over to another picture after having displayed the same still picture for a long time (many hours), it may happen that some parts from the previous picture will remain on screen due to a kind of memory effect. This ghost picture will disappear after some time. To avoid this effect change the pictures regularly or for PC use you can turn on a screen saver in your computer.
Philips has built in an automatic shift of the picture in video mode every 5 minutes to avoid this effect and to prolong the life of the screen.
Very incidentally and after a longer period of unuse (approx. 1 year) the screen may display some strange colour deficiencies. This is quite normal for plasma displays and these effects will disappear after the set has been turned on for some time.
A plasma display consists of a high number of colour pixels. It is within industry standards that very few pixels (< 0.001%) may be defective, even for a new set. There is however no reason to doubt about the quality of the set.
The plasma display technology operates with rare gases which are being influenced by air pressure.
Up to an altitude of 2000 m above sea-level (local air pressure equal or above 800 hPa), the display is functioning fine. Operating the set at a higher altitude (lower air pressure), the picture becomes unstable and the picture performance is deteriorating. The plasma display might then also produce a humming sound. Bringing the set below 2000 m (local air pressure equal or above 800 hPa) it works fine again. Transportation has no influence.

Control of peripheral equipment
The infrared radiation of the screen may influence the reception sensitivity of other peripherals. Solution: replace the batteries of the remote control or change position of other equipment. E.g. keep away a wireless headphone from within a radius of 1,5 m.

No stable or not synchronised VGA picture
Check if you have selected the correct display mode in your PC. See p. 2, Computer display modes.

No picture
Are the supplied cables connected properly? (The power cable to the display, the VGA cables,...)
Is your PC switched on?
Do you see a black screen and the indicator in front of the monitor lights up green, this means that the display mode is not supported.
Switch your VGA source to a correct mode.

Remote control
If your monitor no longer responds to the remote control, the batteries may be exhausted.

If your problem is not solved:
Switch your monitor off and then on again.
Never attempt to repair a defective monitor yourself.
Check with your dealer or call a video technician.

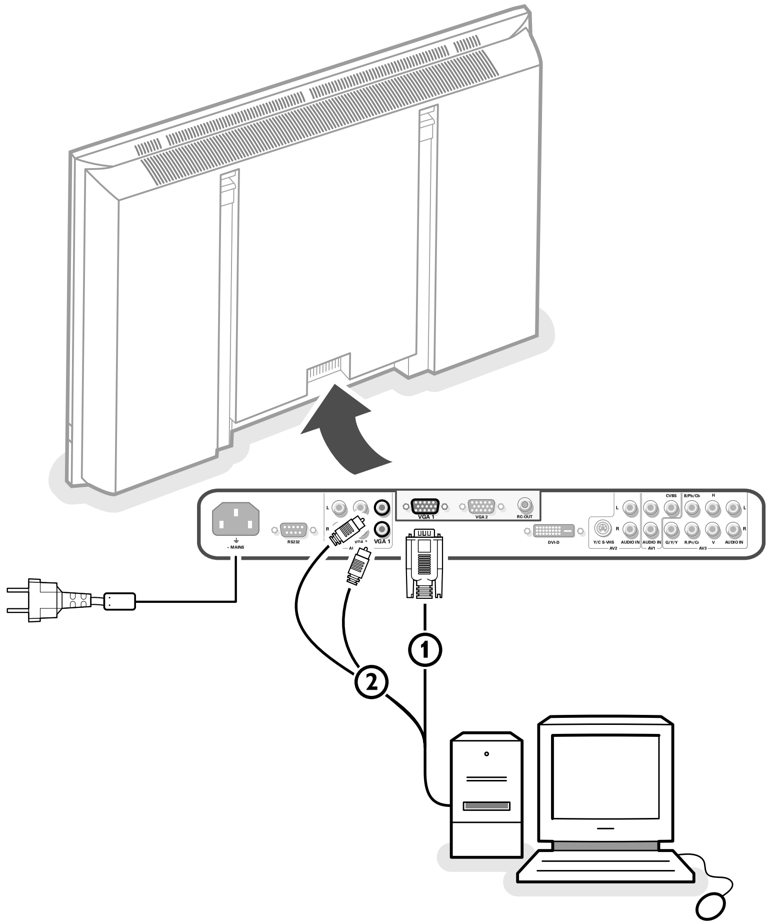
Transport
Keep the original packaging to transport the monitor if needed.

End of life directives
Philips is paying a lot of attention to produce environmentally-friendly in green focal areas. Your new monitor contains materials which can be recycled and reused.
At the end of its life specialised companies can dismantle the discarded monitor to concentrate the reusable materials and to minimise the amount of materials to be disposed of.
Please ensure you dispose of your old monitor according to local regulations.

How to dispose of batteries?
The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries batteries may not be disposed of with your household waste. Please ensure you dispose of batteries according to local regulations.

Miscellaneous
. Ambient temperature: + 5~ + 40°C
. Maximum operating altitude: 2000 m /6562 ft (min. air pressure 800 hPa)
. Mains: AC 95-264V 50Hz/60Hz
. Power consumption: around 290W
. Standby consumption: < 2W
. Weight (excl. packaging) Display: 35 kg
. Dimensions (wxhxd): Display: 107 x 66 x 9 cm
. Wall mounting bracket included

3.3 Enhanced



Unpacking and wall mounting instructions

For the unpacking instructions follow the illustrated steps printed on the packaging (outside and inside). For the wall mounting instructions follow the illustrated steps ❹ to ❻ printed on the separate template and in the supplied booklet.

Make sure that the wall mount is being fixed securely enough so that it meets safety standards. The weight of the monitor (excl. packaging) is about 53 Lbs or 79 Lbs, depending on the screen size (32" or 42").

Note: stands are optional acccessories. Consult your dealer.

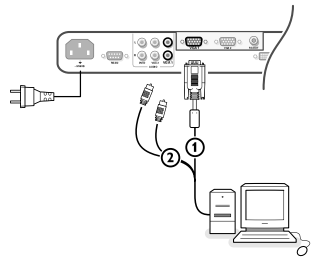
Connect your computer

Directly to the monitor

❶ Connect one end of a VGA cable ① to the video card of the computer and the other end to the **VGA 1** connector at the rear side of the monitor. Fix the connectors firmly with the screws on the plug.

❷ In case of a Multimedia computer, connect the audio cable ② to the audio outputs of your Multimedia computer and to the **AUDIO VGA 1 R** (right) and **L** (left) inputs of the TV monitor.

VGA 2: The video connector for VGA 2 can be programmed to become an input or an output via the Setup menu, see p. 8. The function of being input or output is determined by the used mode. If the monitor is used in TV mode, the VGA 2 connector is VGA output. If the monitor is used in monitor mode, the connector is VGA input or output.



To a TV receiver box

See the handbook of the TV receiver box.

❶ Connect one end of a VGA cable to the video card of the computer and the other end to the **PC/MAC IN** connector at the rear side of the TV receiver box. Fix the connectors firmly with the screws on the plug.

❷ In case of a Multimedia computer, connect the audio cable to the audio outputs of your Multimedia computer and to the **AUDIO IN R** (right) and **L** (left) inputs of the TV receiver box.

Note: Only use the VGA cable supplied with the monitor.

Daisy chaining

The Loop Through facility makes it possible to make a daisy chain with a second monitor.

❸ Connect one end of another VGA cable to the **VGA 2** connector at the rear side of the monitor and the other end to the **VGA 1** connector of a second monitor.

❹ In case of a Multimedia computer, also connect audio cables to the **AUDIO L** and **R** outputs of the original monitor and to the **AUDIO L** and **R** inputs of the second monitor.

The RC out jack next to the VGA 2 connector makes it possible to daisy chain remote control signals to other equipment.
This output cannot be used to daisy chain a second monitor.

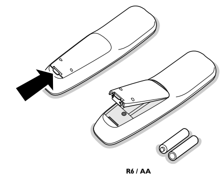
Computer Display modes

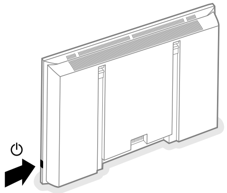
VGA	640x480	60, 72, 75, 85 Hz
Wide VGA	848x480	60 Hz
Wide VGA	852x480	60 Hz
MAC	640x480	66.67 Hz
MAC	832x624	74.55 Hz
MAC	1024x768	74.93 Hz
MAC	1152x870	75 Hz
SVGA	800x600	56, 60, 72, 75, 85 Hz
XGA	1024x768	60, 70, 75, 85 Hz
SXGA	1280x1024	60 Hz, 72 Hz (not with DVI-D source)

When a VGA computer is connected, the display selection is made automatically.

A message is displayed when the monitor does not support the connected VGA mode. Switch your computer to a correct display mode.

Operation





❶ **Insert the mains plug** supplied into the mains inlet at the back of the monitor and in the wall socket. For safety, please, only use the supplied rim-earthed mains cord which has to be inserted in a grounded socket.

❷ **Remote control:** remove the cover of the battery compartment.
Insert the 2 batteries supplied (Type LR6/AA-1.5V).
The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries batteries may not be disposed of with your household waste. Please check on how to dispose of batteries according to local regulations.

❸ Make sure that your TV receiver box and/or PC are switched on and that your PC is in the correct display mode.

❹ **Switch the monitor on :** Press the power key ⏻ at the right side of the monitor.
A green indicator lights up and the screen comes on.
When the monitor does not receive a supported VGA signal and is not connected to a receiver box, the screen switches to standby and the red indicator lights up.

When you switch on your monitor **for the first time**, and the monitor is not connected to a TV receiver box, the language menu automatically appears on the screen. The explanation appears in different languages one at a time.
Follow the instructions on screen to select the correct language or see Setup menu, Language, p. 8.

Use of the remote control

VGA
press repeatedly to select your computer connected to the **VGA 1** or **2** connector or to the **DVI-D** connector.

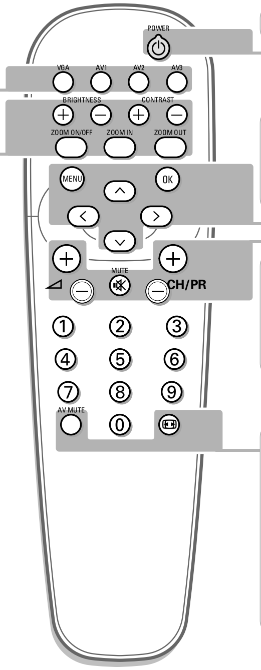
AV1, **AV2**, **AV3**
press to select the peripherals connected to the connector indicated on the monitor.

BRIGHTNESS +/-
to adjust the brightness level of the picture

CONTRAST +/-
to adjust the contrast level of the picture

ZOOM ON/OFF
to activate/de-activate the zoom function. See p. 7.

ZOOM IN/OUT to adjust the zoom factor and to change the magnification of the picture when zoom is activated. See p. 7.



⏻ to switch to standby or on again

MENU to switch the menu on/off
cursor buttons to select your choice and to alter a selected adjustment.

OK to activate your choice

◺ press - or + to adjust the volume

🔇 **Mute button**
Mute the sound or restore it

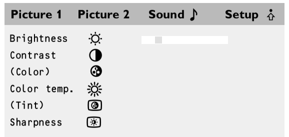
CH/PR Program selection
To browse through the sources selected.

AV MUTE to mute the picture and the sound or restore it (if the monitor is used in monitor mode).
When activated a green indicator starts blinking in front of the monitor.

⊡ **Picture format**
See Picture 2 menu, p. 7.
Press the ⊡ button to switch between the different picture formats.

On screen information
When the monitor is used in the monitor mode, information about the active source (**AV1**, **AV2**, **AV3**, **VGA1**, **VGA2** or **DVI-D**), and the supported video, VGA or HD-format of the selected source is displayed on the screen together with the selected picture format and icons informing about selected sound mode and AV or audio mute.

Use of the menus and the menu system


Picture 1
Picture 2
Sound ♪
Setup
Brightness
Contrast
(Color)
Color temp.
(Tint)
Sharpness

1. Press the **MENU** button on the remote control to summon the different menu headers.
2. Press the cursor left/right to move the cursor horizontally through the menu headers.
3. Press the cursor down to access the menu.

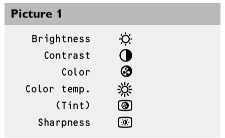
   In case of a slider, move the cursor left/right to adjust.

   In case of a list with options, move the cursor right to enter and use the cursor up/down to select an option.
   Press the cursor left to leave the options list.
4. Press the **MENU** button again to switch off the menu.

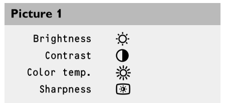
Note: Sometimes not all the menu items are visible on the screen. Press the cursor down until all the items are displayed.

Only when the US English language has been selected (see Setup menu, Language, p. 8), the menu items will be displayed with additional icons.

SD video-mode


Picture 1
Brightness
Contrast
Color
Color temp.
(Tint)
Sharpness

VGA-mode + HD video mode


Picture 1
Brightness
Contrast
Color temp.
Sharpness

Operation

Press the **MENU** button on the remote control to summon the main menu.

Picture 1 menu

Brightness
This control allows you to adjust the brightness level of the picture.

Contrast
This control allows you to adjust the contrast level of the picture.

Color *(only available when the source is **AV1**, **AV2** or **AV3 YCbCr**)*

This control allows you to adjust the saturation level of the colors to suit your personal preference.

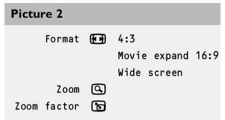
Color temperature
This control allows you to select the color temperature of the picture.
Move the cursor up/down to make a selection.
Press the cursor left to return to the Picture 1 menu.

Tint *(only with NTSC signals and when the source is **AV1** or **AV2**)*

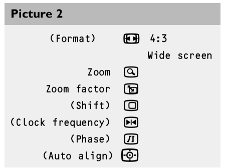
This control allows you to compensate for the color variations in NTSC encoded transmissions.

Sharpness
This control allows you to adjust the edge definition of a picture.

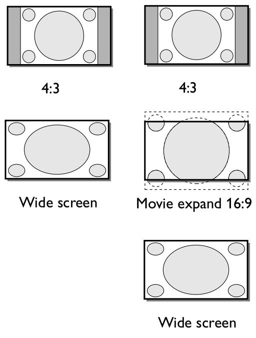
SD video-mode


Picture 2
Format
4:3
Movie expand 16:9
Wide screen
Zoom
Zoom factor

VGA-mode + HD video mode


Picture 2
(Format)
4:3
Wide screen
Zoom
Zoom factor
(Shift)
(Clock frequency)
(Phase)
(Auto align)

4:3 VGA-mode **SD video-mode**


4:3
4:3
Wide screen
Movie expand 16:9
Wide screen

Picture 2 menu

Zoom
Select **Zoom On** to activate the zoom function.
You may also activate the zoom function with the **ZOOM ON/OFF** button on the remote control.
If no zoom is active, press the cursor left/right, up/down to select which part of the screen will be zoomed.

Zoom factor
Select **Zoom factor** and press the cursor left/right to adjust the zoom factor and to change the magnification of the picture.
If zoom is not active, changing the magnification factor will have no effect on the displayed picture.

Format *(only available in 4:3 VGA mode and SD video mode)*
Select **Format** to summon a list of **available** display formats.
Press the cursor up/down to select another display format: 4:3, Movie expand 16:9 or Wide screen.
Note: Movie expand 16:9 is not available in VGA mode.

Shift *(only available in VGA mode on VGA1 or VGA2 and in one of the HD modes. See Connect Peripheral Equipment, p. 9.)*

This control allows you, when necessary, to move the picture in a horizontal or vertical way.

1. Use the cursor left/right, up/down to adjust.
2. Press the **OK** button when done.

Clock frequency *(only available in VGA mode on VGA 1 or VGA 2. See Connect Peripheral equipment, p. 9.)*
This control allows you, when necessary, to adjust the values of the clock frequency so that especially text can be displayed with an optimal overall sharpness.

Use the cursor left/right to adjust.

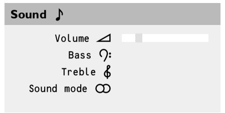
Phase *(only available in VGA mode on VGA 1 or VGA 2. See Connect Peripheral equipment, p. 9.)*

This control allows you, when necessary, to adjust the pixel phase of the picture to avoid picture interference.

Use the cursor left/right to adjust.

Auto align *(only available in VGA mode on VGA1 or VGA2 and in one of the HD modes. See Connect Peripheral Equipment, p. 9.)*

This control allows you to automatically adjust the shift, the clock frequency and the phase in VGA mode and the shift in HD modes.
Press **OK** to execute.



Sound menu

Volume

This control allows you to adjust the volume level of the sound from the speakers.

Bass

Bass attenuates or amplifies the low-frequency response of the sound from the loudspeakers.

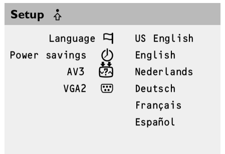
Treble

Treble attenuates or amplifies the high-frequency response of the sound from the loudspeakers.

Sound mode

This control allows you to switch between mono and stereo sound.

Note: Bass, Treble and Sound mode will not be available in VGA loop through mode, i.e. when a TV receiver box is connected to the monitor and a VGA source is selected.



Setup menu

Language

1. Use the cursor down to select **Language**.
2. Press the cursor right to enter the list of selectable languages.
3. Use the cursor up/down to scroll through the list and to bring up other languages which are not displayed on the screen at present.
   Note: Only with the US English language, the menu items will be displayed with additional icons.

Power savings

This control allows you to overrule the automatic power savings feature. In case **Power savings** is switched **Off**, the power always remains on until the monitor is forced to standby.

1. Use the cursor down to select **Power savings**.
2. Press the cursor left/right to select **On** or **Off**.

AV3

This control allows you to set the AV3 input to HD-RGB, YCbCr or HD-YPbPr. When having selected **Auto**, the monitor makes the selection automatically between YCbCr, HD-YPbPr or HD-RGB.
See also p. 9, Equipment with Component Video Output connectors.

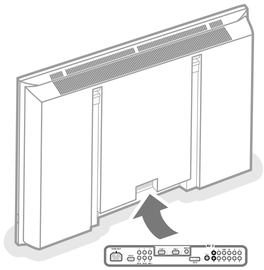
1. Use the cursor down to select **AV3**.
2. Press the cursor right to enter the list with options.
3. Press the cursor up/down to select one of the options.

VGA2

This control allows you to select whether to set the VGA2 connector as input, output or even HD-input.

1. Use the cursor down to select **VGA2**.
2. Press the cursor right to enter the list with options: **VGA IN**, **VGA OUT** or **HD IN**.
3. Press the cursor up/down to select one of the options.
   Note: AV3 and VGA2 will not be available in VGA loop through mode, i.e. when a TV receiver box is connected to the monitor and a VGA source is selected.

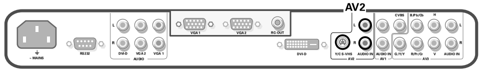
Connect Peripheral Equipment



You may connect 3 possible VGA sources (**VGA1**, **VGA2** or **DVI-D**) and 3 possible video sources (**AV1**, **AV2** and **AV3**) to the monitor.
The following diagrams show you where you can connect your peripheral equipment.

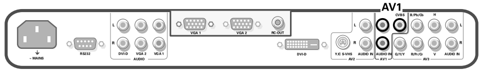
Note: in case the monitor is operating in combination with a TV receiver box (TV mode), the AV inputs on the monitor will be disabled and the VGA2 connector becomes an output.

Equipment with Y/C-SVHS output connectors



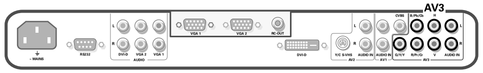
1. Connect the video cable to the **AV2** connector.
2. Connect the audio cables to the equipment's **AUDIO L** and **R** sockets and to the **AUDIO L** and **AUDIO R AV2** sockets on the monitor.

Equipment with CVBS output connectors



1. Connect the video cable to the **AV1** connector.
2. Connect the audio cables to the equipment's **AUDIO L** and **R** sockets and to the **AUDIO L** and **R AV1** sockets on the monitor.

Equipment with Component Video Output connectors



Note: AV3 can handle the following video signals: YCbCr, HD-YPbPr and HD-RGB. The discrimination between the various input formats and the appropriate video processing is done automatically. It is however possible to overrule the automatic detection. See Setup menu, p. 8.

1. Connect the video cables of your equipment with YPbPr output with composite sync on Y, or of your equipment with YCbCr output with composite sync on Y to the YPbPr, resp. YCbCr input **AV3 IN** sockets of the monitor.
2. Connect the video cables of your equipment with RGB output with separate Horizontal and Vertical sync to the RGB input sockets and to the H and V sockets **AV3** of the monitor.
3. Connect the audio cables to the equipment's **AUDIO L** and **R** sockets and to the **AUDIO IN L** and **AUDIO IN R AV3** sockets on the monitor.

Note: when High Definition signals are inputted to the monitor via the YPbPr/RGB input, the monitor switches to the HD Video Mode.

The following HD and SD video modes are supported by the monitor on the YPbPr, RGB and VGA2 HD input:

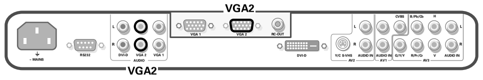
1920x1080/60I	720x480/60P
1280x720/60P	720x576/50P

The following SD video modes are supported by the monitor on the YCbCr input:

720x480/60I
720x576/50I

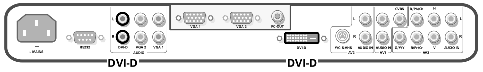
Note: you should make the correct selection for AV3 in the Setup menu, p. 8.

High Definition equipment with VGA connector



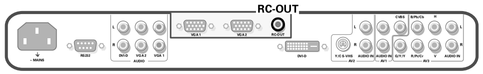
1. Connect the VGA output of your equipment to the **VGA2** connector.
2. Connect the audio cables to the equipment's **AUDIO L** and **R** sockets and to the **VGA2 AUDIO L** and **R** sockets on the monitor.
*Note: you should select **HD IN** for **VGA2** in the Setup menu. (See p. 8.)*

Digital DVI output of your PC (DVI-D)



1. Connect the Digital DVI output of your PC to the **DVI-D** connector.
2. Connect the audio cables to the **DVI-D AUDIO L** and **R** sockets on the monitor.

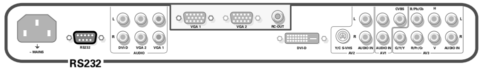
RC out connector



This connector allows you to daisy chain remote control signals to other equipment (e.g. AV receiver, IR repeater) which have an electrical RC in.

Note: it is not possible to daisy chain a second monitor.

Serial I/O port RS232



The RS232 connector is only to be used with the monitor as stand alone. This connector allows you to control the monitor via your PC (as a replacement of the remote control). **Software is supplied on CD-ROM**.

Note: This connector can also be used for dealer service tools.

Supplied driver software

Disclaimer of all warranties: Philips makes no warranty, representation, nor promise with regard to this software. Philips disclaims and excludes any and all express or implied warranties of merchantability, title, or fitness for a particular purpose. Philips does not warrant that the software or documentation will satisfy your requirement or that the software and documentation are without defect or error or that the operation of the software will be uninterrupted.
Limitation of liability: Philips and the authors of programs sold by Philips accept no responsibilities nor liability arising from or relating to this software or documenation.

Tips

Ambient temperature

Do not hang up the monitor above a central heating or other heating sources.

Care of the screen

Clean the anti-reflex coated flat glass screen with a slightly damp soft cloth. Do not use abrasives solvents as it can damage the glass surface of the screen.

Plasma Display characteristics

Caution: A video source (such as a video game, DVD, or TV information channel) which shows a constant non-moving pattern on the TV screen, can cause damage to the screen. When your Flat-TV is continuously used with such a source, the pattern of the non-moving portion of the game (DVD, etc.) could leave an image permanently on the screen. When not in use, turn the video source **OFF**.
Regularly alternate the use of such video sources with normal TV viewing.

When switching over to another picture after having displayed the same still picture for a long time (many hours), it may happen that some parts from the previous picture will remain on screen due to a kind of memory effect. This ghost picture will disappear after some time. To avoid this effect change the pictures regularly or for PC use you can turn on a screen saver in your computer.
Philips has built in an automatic shift of the picture in video mode every 5 minutes to decrease this effect and to prolong the life of the screen.
Very incidentally and after a longer period of unuse (approx. 1 year) the screen may display some strange color deficiencies. This is quite normal for plasma displays and these effects will disappear after the set has been turned on for some time.
A plasma display consists of more than 3.1 Million color pixels. It is within industry standards that very few pixels (< 0.001%) may be defective, even for a new set. There is however no reason to doubt about the quality of the set.
The plasma display technology operates with rare gases which are being influenced by air pressure. Up to an altitude of 6562 ft above sea-level, the display is functioning fine. Operating the set at a higher altitude, the picture becomes unstable and the picture performance is deteriorating. After bringing the set below 6562 ft it works fine again. Transportation has no influence.

Control of peripheral equipment

The infrared radiation of the screen may influence the reception sensitivity of other peripherals. Solution: replace the batteries of the remote control or change position of other equipment. E.g. keep away a wireless headphone from within a radius of 4.92 ft.

No stable or not synchronized VGA picture
Check if you have selected the correct display mode in your PC. See p.4, Computer display modes.

No picture or no sound

Are the supplied cables connected properly? (The power cable to the display, the VGA cables, the audio cables,...)
Is your PC switched on?
Do you see a black screen and the indicator in front of the monitor lights up green, this means that the display mode is not supported.
Switch your VGA source to a correct mode.

Remote control

If your monitor no longer responds to the remote control, the batteries may be exhausted.

If your problem is not solved:
Switch your monitor off and then on again.
Never attempt to repair a defective monitor yourself.
Check with your dealer or call a TV technician.

Transport

Keep the original packaging to transport the monitor if needed.

End of life directives
Philips is paying a lot of attention to produce environmentally-friendly in green focal areas. Your new monitor contains materials which can be recycled and reused.
At the end of its life specialized companies can dismantle the discarded monitor to concentrate the reusable materials and to minimize the amount of materials to be disposed of.
Please ensure you dispose of your old monitor according to local regulations.

How to dispose of batteries ?

The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries batteries may not be disposed of with your household waste. Please ensure you dispose of batteries according to local regulations.

Miscellaneous

. Ambient temperature: + 5~ + 40°C
. Maximum operating altitude:
  2000 m/6562 ft (min. pressure 800h Pa)
. Mains: AC 95-264V 50/60 Hz
. Power consumption:
  ± 250 W (32") or ± 320 W (42")
. Standby consumption: < 2 W
. Weight (excl. packaging)
  Display: 53 (32") or 79 (42") Lbs
. Dimensions (wxhxd):
  Display: 38 x 20,2 x 3,5 inch (32")
  or 47,8 x 25,9 x 3,5 inch (42")
. Wall mounting bracket included

If this instruction manual does not give an answer or if 'Tips' do not solve your TV problem, you can call your Local Philips Customer or Service Center. See the supplied World-wide guarantee booklet.
Please, have the Model and Product number which you can find at the back of your television set or on the packaging, ready, before calling the Philips helpline (800-531-0039).

4. Mechanical Instructions

Index of this chapter:
- Service Positions Monitor
- Rear Cover Removal
- Service Position Panels
- PDP and Glass Plate Replacement
- Re-assembly

Note: Figures below can deviate from the actual situation, due to different set executions.

4.1 Service Positions Monitor

4.1.1 Transport Cushions

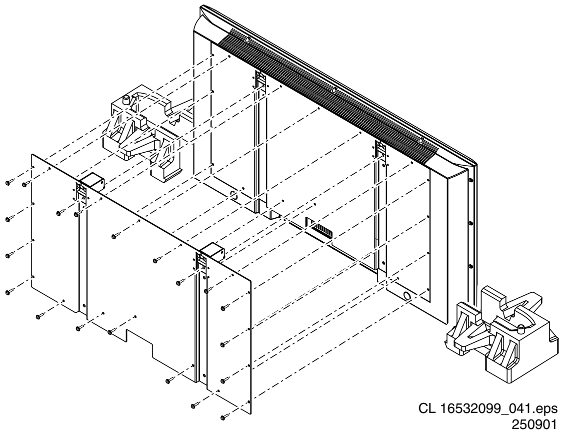

CL 16532099_041.eps
250901

Figure 4-1 Transport cushions

First, put the monitor in its service position. Therefore, disconnect all cables connected to the monitor and take the monitor of the wall (or tabletop stand). Then, place the monitor in the re-enforced transport cushions that function also as service stand (you can order them separately under code 3122 126 40612). See figure "Transport cushions".

Notes:
- There are no special "re-enforced service stands". The cushions used in the factory packaging are already made of reinforced material.
- Always keep in mind that the stands are only designed to keep the monitor in service position as long as the monitor is being serviced. The stands are NOT designed to keep the monitor in the upright position for more then two days.
- After the monitor is serviced, or when nobody is working on the monitor (e.g. in the weekend), it should be removed from the stands and laid down on a cushion or other support system to prevent it from falling.
- Worn out stands should be replaced by new ones (monitor will tilt to much forward).
- Never leave the monitor alone when the stands are not fully pressed on its place.
- It is possible to move the right stand a bit to the right so that you can access the IR-LED and ON/OFF switch, but the monitor can then not be left alone because the stands are NOT designed to carry the weight of the monitor in that position. A better solution to access the IR-LED and/or ON/OFF switch is to make some holes in the stands at the position of the LED and switch. Do not make the holes to big, as this will influence the strength of the stands.

4.1.2 Aluminium Stand:

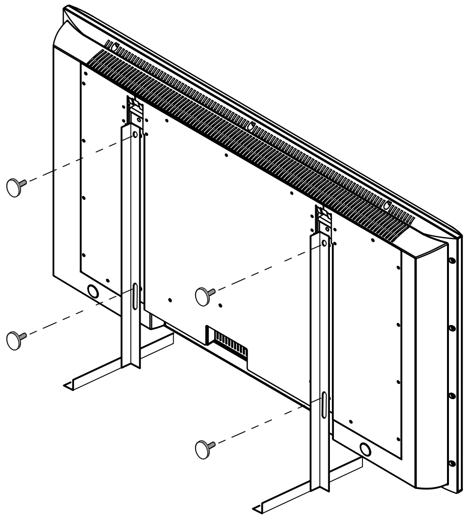

CL 36532051_001.eps
040703

Figure 4-2 Aluminium stand

The aluminium stand (order code 3122 785 90480) can be mounted with the back cover removed or still left on. So, the stand can be used to store products or to do measurements. It is also very suitable to perform duration tests without taking much space, without having the risk of overheating and no risk of products falling. The stand can be mounted and removed quickly and easy with use of the delivered screws that can be tightened and loosened manually without the use of tools. See figure above.

Note: Only use the delivered screws to mount the monitor to the stand.

4.1.3 Foam Stand:

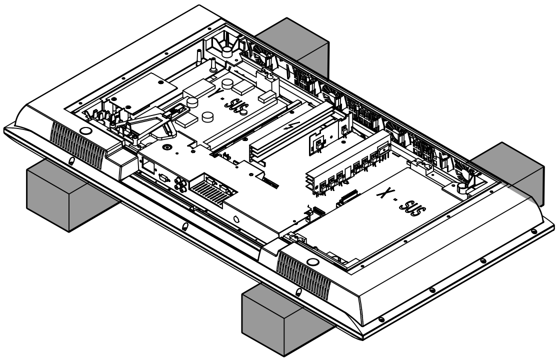
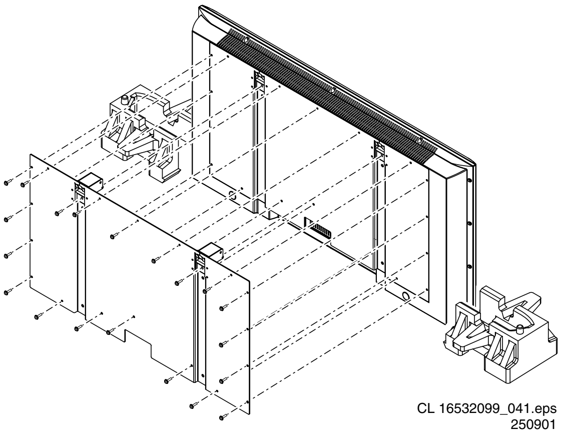

CL 36532051_002.eps
190603

Figure 4-3 Foam stand

The foam stand (order code 3122 785 90580) can be used for all types and sizes of FTVs and LCD TVs and can even be used to e.g. exchange a CRT of a normal TV. By laying the plasma or LCD TV flat on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments. See figure "Foam stand".
By first placing a mirror flat on the table under the TV you can easily see if something is happening on the screen. The stand is also handy to replace the screen (PDP or LCD).

4.2 Rear Cover Removal



CL 16532099_041.eps
250901

Figure 4-4 Rear cover removal

To be able to access or measure the panels, remove the rear cover (metal back plate):

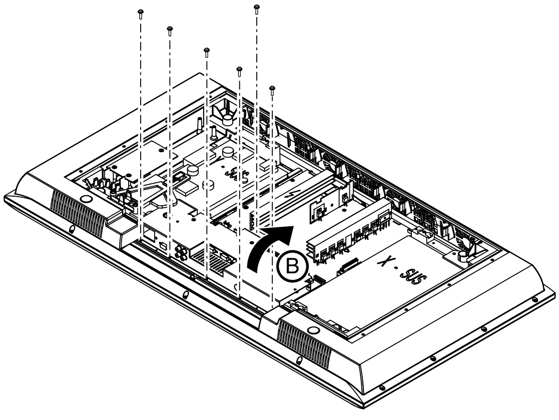
1. Remove all fixation screws from the back plate, as indicated in figure above (the amount of screws that need to be removed differs from the amount in the figure above).
2. Remove the metal back plate. Make sure that wires and flat foils are not damaged during plate removal.

Warning: make sure that the mains power is disconnected when you remove the metal back plate.

4.3 Service Position Panels

4.3.1 SCAVIO Panel

Solder-side SCAVIO



CL 16532099_042.eps
200901

Figure 4-5 Service position SCAVIO (1)

To access the panel:

1. Remove the cables from connectors 0301, 0305, 0320, 0319, and 0388 to the SCAVIO panel.
2. Remove the power cable from the mains power inlet to the power supply (connector 0308).
3. Remove all screws at the bottom.
4. Hold the panel while removing the top screw, in order to prevent that the panel will drop.
5. Take the panel out, and turn it 180 degrees, so that you face the solder side of the SCAVIO panel.
6. Reconnect all cables. Use a standard power cable to connect the mains directly to PSU-connector 0308, and use the 'LED/Switch panel' service kit 3122 785 90410 (as the original cable is too short).

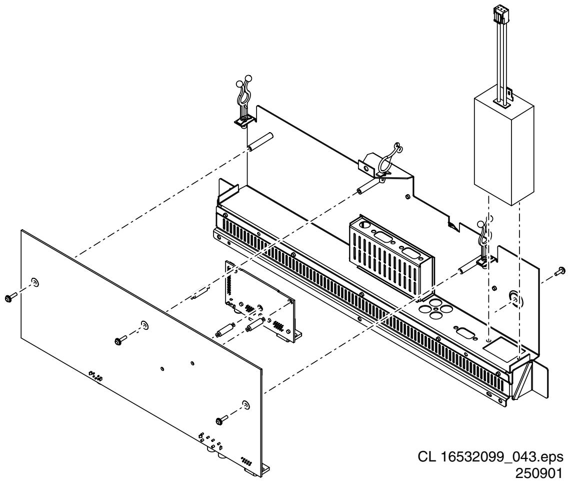
Caution: When measuring, watch out for the 'hot' left heat sink of the PSU!

Another way to measure the SCAVIO panel:

1. Remove all screws at the bottom.
2. Hold the panel while removing the top screw, in order to prevent that the panel will drop.
3. Put a piece of paper (or cardboard) in front of the Power Supply.
4. Take the panel out, and turn it upward [B], so that you face the solder-side of the SCAVIO panel.

Caution: Make sure that the metal connector plate does not touch any 'hot' part of the Power Supply (heatsink).

Component-side SCAVIO



CL 16532099_043.eps
250901

Figure 4-6 Service position SCAVIO (2)

To access the other side of the SCAVIO panel:

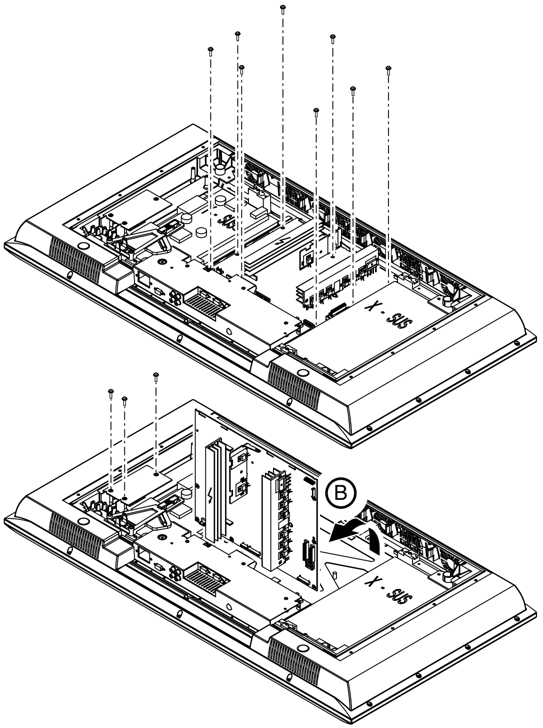
1. Disconnect all cables going to the SCAVIO panel.
2. Remove all screws at the connectors of the connector plate, see figure 'Solder-side SCAVIO'.
3. Remove all fixation screws that connect the SCAVIO panel to the connector plate, see figure 'Component-side SCAVIO'.
4. Reconnect the SCAVIO panel, be careful: do not make a short-circuit!

4.3.2 VGA Connector Panel

To remove the VGA Connector Panel:

1. Squeeze the three plastic pins that connect this panel to the SCAVIO board, while you pull it carefully upwards.
2. Unplug the flat cable.

4.3.3 Power Supply Panel



CL 16532099_044.eps
270901

Figure 4-7 Service Position Power Supply

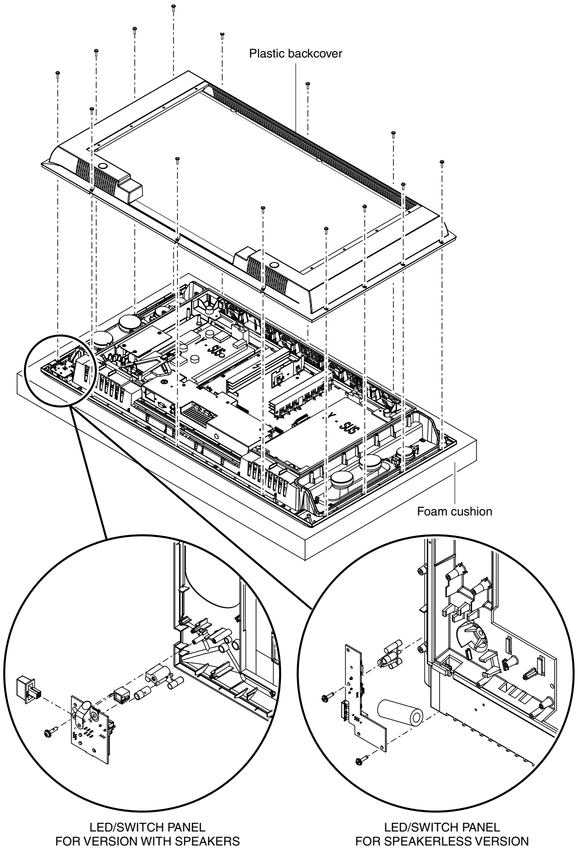
It is possible to perform most measurements from the component level side (thus, how the panel is mounted in the set). However, to reach the copper-side of the Power Supply:

1. Unplug the power.
2. Remove all fixation screws from the Power Supply.
3. Hinge the Power Supply forward, so that you can reach the copper-side. Use a non-conducting part underneath, to support the PWB (e.g. a carton box).
   Caution: make sure that, when you hinge the Power Supply forward, you do not damage the cables. Pay special attention to the flat cable (on connector 0307) and the cable on connector 0306, because they can be easily damaged by the sharp edge of the connector plate.
4. To remove the Power Supply, unplug all cables.
5. Remove the Power Supply.

4.3.4 Audio Amplifier Panel

The solder-side of this panel is directly accessible. To access the component-side, or to remove the whole panel, unscrew the three fixation screws (see figure 'Power Supply Panel'), and (re)move the panel.

4.3.5 LED/Switch Panel and Speakers



CL 36532051_045.eps
300603

Figure 4-8 Service Position LED/Switch Panel and Speakers

To access or replace the LED/Switch panel and/or speakers:

1. Take the monitor from its service stand, and put it (face down) on a soft surface (blanket, foam cushion or foam stand), to make sure that you do not damage the front glass plate.
2. Unscrew all fixation screws of the plastic back cover.
3. Lift and remove the plastic back cover.
4. You can access now the LED/Switch panel and/or the speakers.

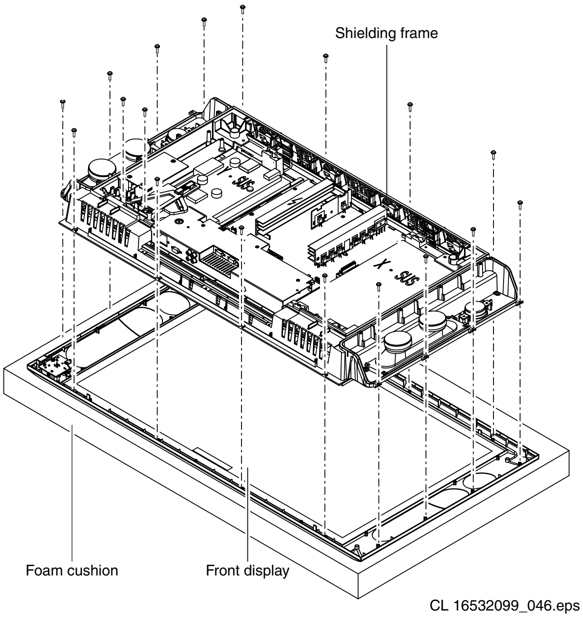
4.3.6 LED/Switch panel

To measure the component-side, or to remove the LED/Switch panel, unscrew one fixation screw (see enlarged part of figure 'LED/Switch Panel and Speakers'), and remove the panel.

4.3.7 Loudspeakers

As soon as you have removed the plastic back cover, you must replace the speaker-box sealing foams (12nc: 3122 358 76221). This, to ensure that the loudspeakers are airtight.
Do not stretch the foam during mounting. Pay special attention to the corners, to make sure that the foam is not stretched and that it is pushed in the corners.

4.4 PDP and Glass Plate Replacement

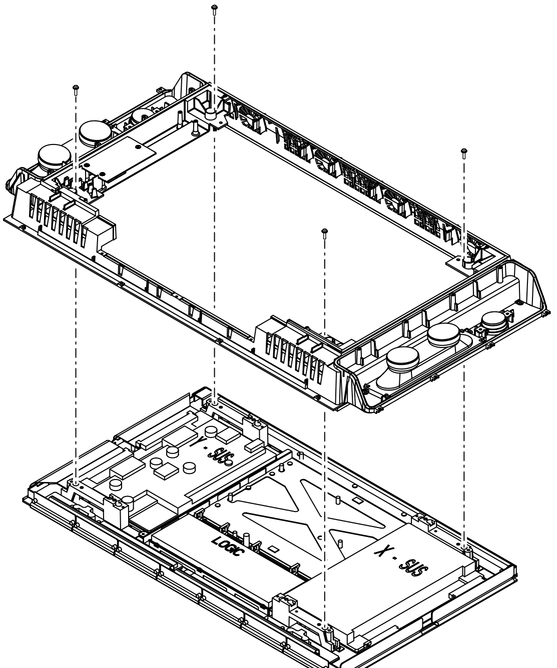


CL 16532099_046.eps
270901

Figure 4-9 Exchanging the glass plate

Exchanging the glass plate

1. Take the monitor from its service stand, and put it (face down) on a soft surface (blanket, foam cushion or foam stand), to make sure that you do not damage the front glass plate.
2. Remove the metal back plate as described in paragraph 'Rear Cover Removal'.
3. Unscrew all fixation screws of the plastic back cover.
4. Lift and remove the plastic back cover.
5. If the triangular shaped cable holder at the left bottom is present, unscrew the fixation screws of the holder at the left bottom, see figure 'Exchange Glass Plate'.
6. Unplug the cable of the LED/Switch panel, connector 0320
7. If the ESM Filter Panel at the left bottom is present, unscrew the fixation screws.
8. Unscrew all fixation screws of the (metallised) shielding frame, see figure 'Exchange Glass Plate'.
9. You can now remove the (metallised) shielding frame, together with the PDP, Audio panel, Power supply and SCAVIO panel attached to it, see figure 'Exchange Glass Plate'.
   Note: To prevent scratches, make sure to put the shielding frame together with the PDP on a soft surface.
10. Replace the glass plate.



CL 16532099_047.eps
260901

Figure 4-10 Exchanging the PDP

To exchange the PDP panel:

1. Take out the SCAVIO panel and Power Supply panel, as described earlier.
2. Unscrew all fixation screws of the (metallised) shielding frame (two at the top and two at the bottom, see figure 'Exchange PDP').
3. The shielding frame can now be taken off the PDP.
4. Replace the PDP.

4.5 Re-assembly

To re-assemble the whole set, do all processes in reverse order.

Notes:

- You must replace the speaker-box sealing foam, in case the plastic rear cover has been (re)moved.
- While re-assembling, make sure all the cables are in their original position and make sure all the EMC foams are present to ensure 'EMC tightness'.

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

1. Test points
2. Service Modes
3. Problems and Solving Tips (related to CSM)
4. ComPair
5. Error Codes
6. The Blinking LED Procedure
7. Protections
8. Repair Tips

5.1 Test Points

The chassis is equipped with test points (I- and F-points) printed on the circuit board assemblies. See test point overview in chapter 6.

Perform measurements under the following conditions:

- Service Default Mode.
- Video: colour bar signal (via PC or VGA-generator).
- Audio: 1 kHz, 2 V_pp (via PC or VGA-generator).

5.2 Service Modes

Service Default Mode (SDM) and Service Alignment Mode (SAM) offer several features for the service technician, while the Customer Service Mode (CSM) is used for communication between a Philips Customer Care Centre (P3C) and a customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements) and the FTV chassis. It offers the ability of structured troubleshooting, test pattern generation, error code reading, software version readout, and software upgrading.
Minimum requirements: a Pentium Processor, Windows 9x/NT/2000/XP, and a CD-ROM drive (see also paragraph 5.4).

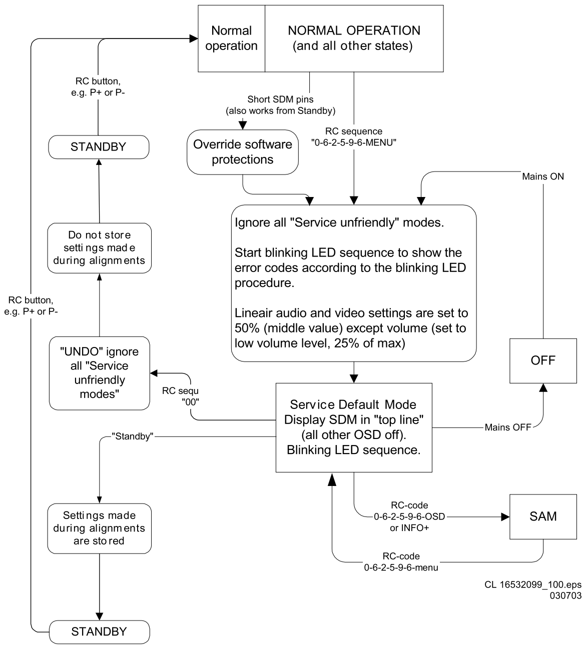
5.2.1 Service Default Mode (SDM)

Purpose

- To create a pre-defined setting to get the same measurement results as given in this manual.
- To override SW protections (only when SDM is entered via the "service pins" on connector 0382).
- To start the blinking LED procedure.

Specifications

- All picture settings at 50% (brightness, contrast, etc.).
- Colour temperature is set to "normal".
- Bass, treble and balance at 50%; volume at 25%.
- All service-unfriendly modes (if present) are disabled, like:
- Video blanking,
- Slow de-mute,
- Anti ageing,
- Automatic switch to Standby when no sync signals are received.


Normal operation
NORMAL OPERATION (and all other states)
RC button, e.g. P+ or P-
Short SDM pins (also works from Standby)
STANDBY
Override software protections
RC sequence "0-6-2-5-9-6-MENU"
Mains ON
Do not store settings made during alignments
Ignore all "Service unfriendly" modes.
Start blinking LED sequence to show the error codes according to the blinking LED procedure.
Lineair audio and video settings are set to 50% (middle value) except volume (set to low volume level, 25% of max)
RC button, e.g. P+ or P-
"UNDO" ignore all "Service unfriendly modes"
OFF
RC sequ "00"
Service Default Mode Display SDM in "top line" (all other OSD off). Blinking LED sequence.
"Standby"
Mains OFF
Settings made during alignments are stored
RC-code 0-6-2-5-9-6-OSD or INFO+
SAM
RC-code 0-6-2-5-9-6-menu
STANDBY

CL 16532099_100.eps
030703

Figure 5-1 CL1SDM Flowchart

How to enter SDM

Use one of the following methods:

- Use the standard RC-transmitter and key in the code **062596**, directly followed by the **MENU** button.
- Short jumpers 1 and 2 of connector 0382 on the SCAVIO panel.

After entering SDM, a blank screen is visible, with SDM in the upper left side for recognition. The Blinking LED procedure is started and will indicate any possible errors via the (orange) front LED.

How to navigate

To toggle to the SAM mode, use a standard customer RC-transmitter and key in the code **062596**, directly followed by the **OSD (i+)** key.

How to exit

Use one of the following methods (the set returns to its last status):

- Switch the set to STANDBY by pressing the power button on the remote control transmitter (if you switch the set "off" by removing the Mains power, the set will return in SDM, when the Mains power is re-applied).
- Use the standard RC-transmitter and key in the code **00**.

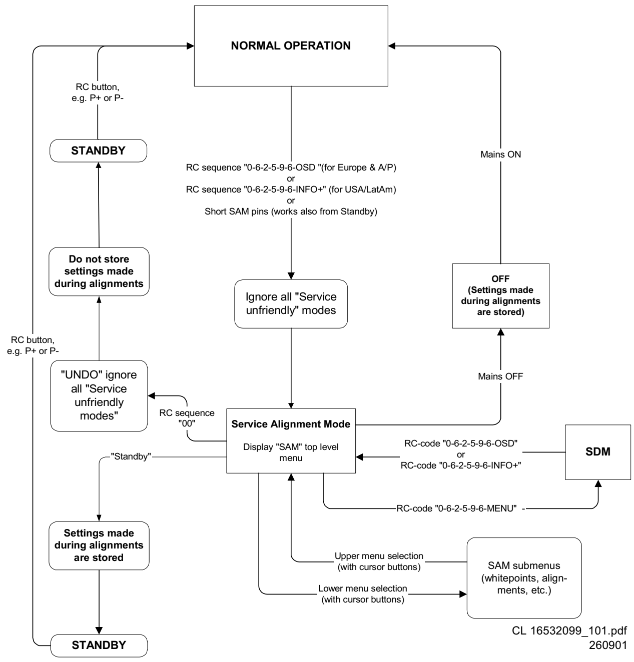
5.2.2 Service Alignment Mode (SAM)

Purpose

- To perform (software) alignments.
- Easy way to identify the commercial type number of the set.
- Easy identification of the used software versions.
- To display (or clear) the error code buffer.
- View operational hours.

Specifications

- Operation hours counter.
- Software version reading.
- Error buffer reading and erasing.
- Software alignments.
- Test pattern generation.


NORMAL OPERATION
RC button, e.g. P+ or P-
STANDBY
RC sequence "0-6-2-5-9-6-OSD "(for Europe & A/P) or RC sequence "0-6-2-5-9-6-INFO+" (for USA/LatAm) or Short SAM pins (works also from Standby)
Mains ON
Do not store settings made during alignments
Ignore all "Service unfriendly" modes
OFF (Settings made during alignments are stored)
RC button, e.g. P+ or P-
"UNDO" ignore all "Service unfriendly modes"
Mains OFF
RC sequence "00"
Service Alignment Mode
Display "SAM" top level menu
RC-code "0-6-2-5-9-6-OSD" or RC-code "0-6-2-5-9-6-INFO+"
SDM
"Standby"
RC-code "0-6-2-5-9-6-MENU"
Settings made during alignments are stored
Upper menu selection (with cursor buttons)
Lower menu selection (with cursor buttons)
SAM submenus (whitepoints, alignments, etc.)
STANDBY

CL 16532099_101.pdf
260901

Figure 5-2 SAM Flowchart

How to enter

Use one of the following methods:

- Use a standard RC-transmitter and key in the code **062596** directly followed by the **OSD (i+)** button.
  Note: the OSD (i+) is not available on the original FTV remote control; therefore use another Philips remote control (e.g. MG, EMG or A10).
- Short jumpers 3 and 4 of connector 0382 on the SCAVIO panel.

The following screen is visible:

Table 5-1 SAM Menu "General"

Service Alignment Menu	General
Type Nr. - AG Code	32FD9944/01S (example)
SW Version OTC	AAAABC-X.Y_xxxxx
SW Version PW	AAAABC-X.Y_xxxxx
SW Version EPLD	AAAABC-X.Y_xxxxx
Errors 1	xx xx xx xx xx
Errors 2	xx xx xx xx xx
Operational hours	xx
Reset error buffer	Press OK to reset
Store	Press OK to store

1. **TYPE NR.** Gives the commercial type number of the monitor, e.g. 32FD9944/01S.
2. **AG CODE.** Is not implemented.
3. **SW VERSION OTC** (AAAABC-X.Y-xxxxx).
   Note: You will find details of the latest software versions in the chapter "Software Survey" of the "Product Survey - Colour Television" publication, which is published four times each year.
   - A = the chassis name (FM23 for **all** displays).
   - B = the region (E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM or G = Global).
   - C = the configuration name (B= Basic, E= Enhanced).
   - X = the main software version number.
   - Y = the sub software version number.
   - x = last five digits of 12nc code.
4. **SW VERSION PW** (AAAABC-X.Y-xxxxx). See description above.
5. **SW VERSION EPLD** (AAAABC-X.Y-xxxxx). See description above.
6. **ERRORS 1.** Gives the last five errors of the error buffer. The last detected error is displayed at the most left position. The errors are displayed as 2 digit numbers and separated by a space. When less than 10 errors occurred, the rest of the line(s) is empty. In case of no errors, the text "No Errors" is displayed behind menu item "Errors 1". See paragraph 5.5 for a description.
7. **ERRORS 2.** Gives the first five errors of the error buffer. The last detected error is displayed at the most left position.
8. **OPERATIONAL HOURS.** The Operations Hours indicate the time that the display was active with half an hour resolution. It represents the system hours (OTC), not the PDP hours.
9. **RESET ERROR BUFFER.** Erase the contents of the error buffer. Press "OK" on your remote control to activate. The content of the error buffer is cleared.
10. **STORE.** This will store the performed alignments. Press "OK" on your remote control to activate.
    Note: if you do not want to store the performed alignments, leave the SAM mode via code 0 0 on your remote control. Do not activate the "store" item.

How to navigate

Use one of the following methods:

- Select the sub-menu's (upper line) with the CURSOR LEFT/RIGHT keys on the remote control transmitter.
- Select the menu items with the CURSOR UP/DOWN keys. With the CURSOR LEFT/RIGHT keys it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
- To toggle to the SDM mode, use the standard customer RC-transmitter and key in the code **062596**, directly followed by the **MENU** key.

How to exit

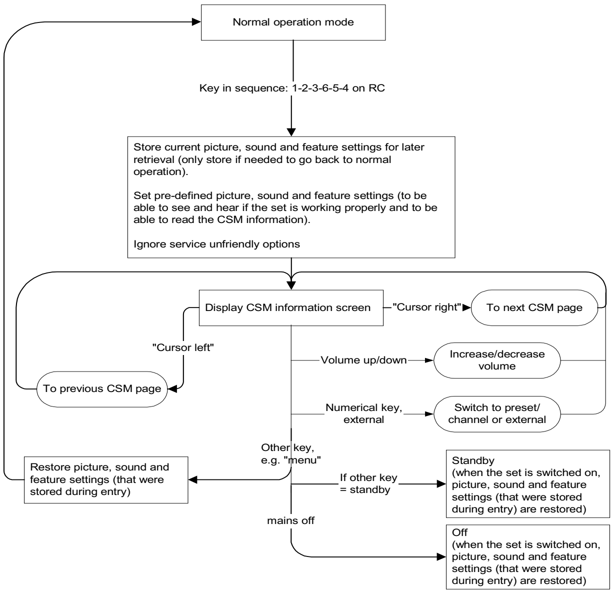
Use one of the following methods:

- Switch the set "off" (with the Mains switch or by pulling the Mains cord).
  Note: new alignment settings are always stored, even when item "store" was not activated!
- Switch the set to "standby" by pressing the power button on the remote control transmitter.
  Note: new alignment settings are always stored, even when item "store" was not activated!
- Use the standard RC-transmitter and key in the code **00**.
  Note: new alignment settings are not stored (except when item "store" was activated)!

5.2.3 Customer Service Mode (CSM)

Purpose

When a customer is having problems with his TV-set, he can call his dealer or helpdesk. The service technician can than ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severness of the complaint. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.
The CSM is a read only mode; therefore, modifications in this mode are not possible.


Normal operation mode
Key in sequence: 1-2-3-6-5-4 on RC
Store current picture, sound and feature settings for later retrieval (only store if needed to go back to normal operation).
Set pre-defined picture, sound and feature settings (to be able to see and hear if the set is working properly and to be able to read the CSM information).
Ignore service unfriendly options
Display CSM information screen
"Cursor right"
To next CSM page
"Cursor left"
To previous CSM page
Volume up/down
Increase/decrease volume
Numerical key, external
Switch to preset/ channel or external
Other key, e.g. "menu"
Restore picture, sound and feature settings (that were stored during entry)
If other key = standby
Standby (when the set is switched on, picture, sound and feature settings (that were stored during entry) are restored)
mains off
Off (when the set is switched on, picture, sound and feature settings (that were stored during entry) are restored)

CL 16532099_103.pdf
260901

Figure 5-3 CSM Flowchart

How to enter

Use the standard customer RC-transmitter and key in the code **123654**.

When CSM is entered, the values of brightness, contrast, etc. are set to 50% (of max. value), and volume is set to 25%, to ensure that you always have a picture and sound.

After switching "on" the Customer Service Mode, the following screen will appear:

Table 5-2 CSM Menu

Customer Service Menu 1	
1 - Type Nr. - AG Code	32FD9944/01S-AG02 (example)
2 - SW Version OTC	AAAABC-X.Y_xxxxx
3 - SW Version PW	AAAABC-X.Y_xxxxx
4 - SW Version EPLD	AAAABC-X.Y_xxxxx
5 - Code 1	xx xx xx xx xx
6 - Code 2	xx xx xx xx xx
7 - Volume	xx
8 - Brightness	xx
9 - Contrast	xx

	Customer Service Menu 2
10 - Color	xx
11 - Tint	xx
12 - Sharpness	xx
13 - Soundmode	xx
14 - Source	xx
15 - AV Mute	xx

1. **TYPE NR. - AG CODE.** Gives the commercial type number of the monitor, e.g. xxFD9954/01S. The AG CODE is not implemented.
2. **SW VERSION OTC** (AAAABC-X.Y-xxxxx)
   Note: You will find details of the latest software versions in the chapter "Software Survey" of the "Product Survey - Colour Television" publication, which is published four times each year.
   - A = the chassis name (FM23 for **all** displays).
   - B = the region (E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM or G = Global).
   - C = the configuration name (B= Basic, E= Enhanced).
   - X = the main software version number.
   - Y = the sub software version number.
   - x = last five digits of 12nc code.
3. **SW VERSION PW** (AAAABC-X.Y-xxxxx). See description above.
4. **SW VERSION EPLD** (AAAABC-X.Y-xxxxx). See description above.
5. **CODE 1.** Gives the last five errors of the error buffer. The last detected error is displayed at the most left position. The errors are displayed as 2 digit numbers and separated by a space. When less than 10 errors occurred, the rest of the line(s) is empty. In case of no errors, the text NO ERRORS is displayed behind menu item CODE 1. See paragraph "Error Buffer" for a description.
6. **CODE 2.** Gives the first five errors of the error buffer. The last detected error is displayed at the most left position.
7. **VOLUME.** Gives the last volume status for the selected source, as set by the customer.
8. **BRIGHTNESS.** Gives the last brightness status for the selected source, as set by the customer.
9. **CONTRAST.** Gives the last contrast status for the selected source, as set by the customer.
10. **COLOR** (not present in *Basic* configuration). Gives the last colour status for the selected source, as set by the customer.
11. **TINT** (only for *NTSC Enhanced* configuration). Gives the last tint status for the selected source, as set by the customer.
12. **SHARPNESS.** Gives the last sharpness status for the selected source, as set by the customer.
13. **SOUND MODE.** Gives the selected sound mode, as set by the customer.
14. **SOURCE.** Gives the selected source, as set by the customer.
15. **AV MUTE.** Indicates if AV Mute is "on" or "off".

How to navigate

Use one of the following methods:

- Switch to the other CSM page with the "cursor left/right" keys on the remote control.
- You can increase/decrease volume with the "volume up/ down" keys on the remote control.
- You can switch to another source with the "num / ext" keys on the remote control.

How to exit

Use one of the following methods:

- Press the MENU key of the remote control transmitter.
- Switch the set to "standby" with the Power switch on the remote control.
- Switch the set "off" with the Mains power switch on the set.

5.3 Problems and Solving Tips (Related to CSM)

5.3.1 Picture Problems

Note: Below described problems are all related to the monitor settings. The procedures to change the value (or status) of the different settings are described.

Picture too dark or too bright

Increase/decrease the "brightness" and/or the "contrast" value when the picture improves after you have switched on the Customer Service Mode. The new value is automatically stored.

White line around picture elements and text
Decrease the "sharpness" value when the picture improves after you have switched on the Customer Service Mode. The new value is automatically stored.

Snowy picture and/or unstable picture
A scrambled or decoded signal is received.

Black and white picture
Increase the "colour" value when the picture improves after you have switched on the Customer Service Mode. The new value is automatically stored.

Menu text not sharp enough
Decrease the "contrast" value when the picture improves after you have switched on the Customer Service Mode. The new value is automatically stored.

5.3.2 Sound Problems

No sound from left or right speaker
Check item VOLUME in the CSM mode. If value is low, increase the volume level. The new value is automatically stored.

No sound or sound too loud (after channel change/ switching on)
Increase/decrease the "volume" level when the volume is OK after you switched on the CSM. The new value is automatically stored.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (Dealer Service Tool), which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based faultfinding program, and an RS232 cable between PC and the (defective) product.

The ComPair faultfinding program is able to determine the problem of the defective monitor. ComPair can gather diagnostic information in two ways:

- **Automatic** (by communication with the monitor): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I2C level. ComPair can send and receive commands to the micro controller of the monitor, and so can access the I2C bus of the monitor. In this way, it is possible for ComPair to communicate (read and write) to devices on the I2C busses of the FTV monitor.
- **Manually** (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the monitor is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point F7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some additional features like:

- Software upgrading (upload possible to OTC and PW Scaler).
- Emulation of the (European) Dealer Service Tool (DST).
- If both ComPair and SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink.
  Example: Measure the DC-voltage on capacitor C2228 (Schematic/Panel) of the SCAVIO panel. Click on the "Panel" hyperlink to automatically show the PWB with a highlighted capacitor C2568. Click on the "Schematic" hyperlink to automatically show the position of the highlighted capacitor.

5.4.3 How to Connect

1. First, install the ComPair Browser software on your PC (read the installation instructions carefully).
2. Connect an RS232 interface cable between a free serial (COM) port on your PC and the RS232 connector on the plasma monitor.
3. Switch the plasma monitor "off" and "on" again (with the Mains switch).
4. Start the ComPair program and follow the instructions.

Note: once the set is in ComPair mode, the front LED will blink red, at a frequency of 0.3 Hz.

5.4.4 How to Order

ComPair order codes:

- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070.
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003). If you encounter any problems, contact your local support desk.

Note: The RS232 cable is not included. It is a standard cable (9p sub-D male-to-female) that can be obtained by a computer store. It is supplied however with the ComPair interface (4822 727 21631), necessary for servicing other Philips TVs.

5.5 Error Buffer

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is written at the left side and all other errors shift one position to the right.

5.5.1 How to Read the Error Buffer

Use one of the following methods:

- On screen via the SAM (only if you have a picture). Examples:
  - Errors: **6 0 0 0 0,** error code 6 is the last and only detected error.

  - Errors: **9 6 0 0 0,** error code 6 was first detected and error code 9 is the last detected (newest) error.
- Via the blinking LED procedure (when you have no picture). See paragraph "The Blinking LED Procedure".
- Via ComPair.

5.5.2 How to Clear the Error Buffer

The error code buffer is cleared in the following cases:

- By activation of the RESET ERROR BUFFER command in the SAM menu.
- When you transmit the code **062599** with a standard remote control transmitter.

5.5.3 Error Codes

Table 5-3 Error code overview

Error	Device	Description	Item	Diagr.
1	TEA6422D	Audio switch (only Enhanced)	7798	SC13
2	MSP3451G	Sound processor	7812	SC14
3	PCF8574-SCAVIO	I/O expander SCAVIO	7540	SC8
4	PCF8591	AD-DA expander	7530	SC8
5	FS6377	Clock generator	7570	SC9
6	PCF8574-PSU	I/O expander PSU	7370	P3
7	24C16 OTC	NVM OTC	7430	SC7
8	24C16 PW	NVM PW	7580	SC9
9	SAA7118	Video decoder (only Enhanced)	7225	SC5
10	AD9887	ADC/TMDS receiver	7170	SC4
11	SDA9400	De-interlacer (only Enhanced)	7280	SC5
12	EP1K30QC	EPLD processor	7656	SC11
13	PDP	Display I2C error		
14	PDP H2-version (FHP)	The "high brightness" mode (only for H2) does not function		
15	LM75A	Temperature sensor I2C error (only for 37-inch)	7372	P3
20	Download comm.	Errors during downloading		
21	CSP comm.	CSP time-out error		
30	PDP	Display HW error		
31	PDP	Display warning code (e.g. loose connector or defective PSU)		
40	Temperature alarm	Detection of over-temperature		
70	V_s overvoltage	Overvoltage on V_s, V_a, +3V3, +5V or a combination	7341	P3
71	V_s undervoltage	Undervoltage on V_s	7308A/B	P3
72	V_a undervoltage	Undervoltage on V_a	7308C/D	P3
73	+5V undervoltage	Undervoltage on +5V	7330A/B	P3
74	+3V3 undervoltage	Undervoltage on +3V3	7330C/D	P3
75	DC-PROT	Audio amplifier protection	7362	P3
76	TEMP-PSU	Over-temperature in PSU	7366A	P3
77	Protection with reason unknown	No valid protection can be read, but protection is active (PSU)		
78	Protection after several retries	PW Scaler will not start comm. with OTC after several retries		
9x	OTC	Internal OTC error (replace OTC)	7383	SC7

Notes:

- In case of non-intermittent faults, clear the error buffer before you begin the repair. This to ensure that old error codes are no longer present.
- If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).

5.6 The Blinking LED Procedure

Via this procedure, you can make the contents of the error buffer visible via the front LED (orange colour). This is especially useful when there is no picture. When no errors are present, the LED will stay green.

When the SDM is entered, or when code **062500** is entered with the remote control, the LED will blink the contents of the error-buffer.

Error-codes ≥ 10 are shown as follows:

1. "n" long blinks of 750 ms, which is/are an indication of the decimal digit,
2. a pause of 1.5 s,
3. "n" short blinks (n = 1-9),
4. when all the error-codes are displayed, the sequence finishes with a LED blink of 3 s,
5. the sequence starts again.

Example of error buffer: **12 9 6 0 0**
After entering SDM:

1. 1 long blink of 750 ms followed by a pause of 1.5 s,
2. 2 short blinks followed by a pause of 3 s,
3. 9 short blinks followed by a pause of 3 s,
4. 6 short blinks followed by a pause of 3 s,
5. 1 long blink of 3 s to finish the sequence,
6. the sequence starts again.

5.7 Protections

You can read the error codes of the error buffer via the service menu (SAM), the blinking LED procedure, or via ComPair. If a fault situation is detected an error code will be generated and if necessary, the set will be put in the protection mode. Blinking of the red LED at a frequency of 5 Hz indicates the protection mode.
In some error cases, the microprocessor does not put the set in the protection mode. The error codes are indicated by an orange front LED.

To get a quick diagnosis the chassis has three service modes implemented:

- The Customer Service Mode (CSM): easy way to read out the status of the set.
- The Service Default Mode (SDM): start-up of the set in a predefined way.
- The Service Alignment Mode (SAM): adjustment of the set via a menu and with the help of test patterns.

5.8 Repair Tips

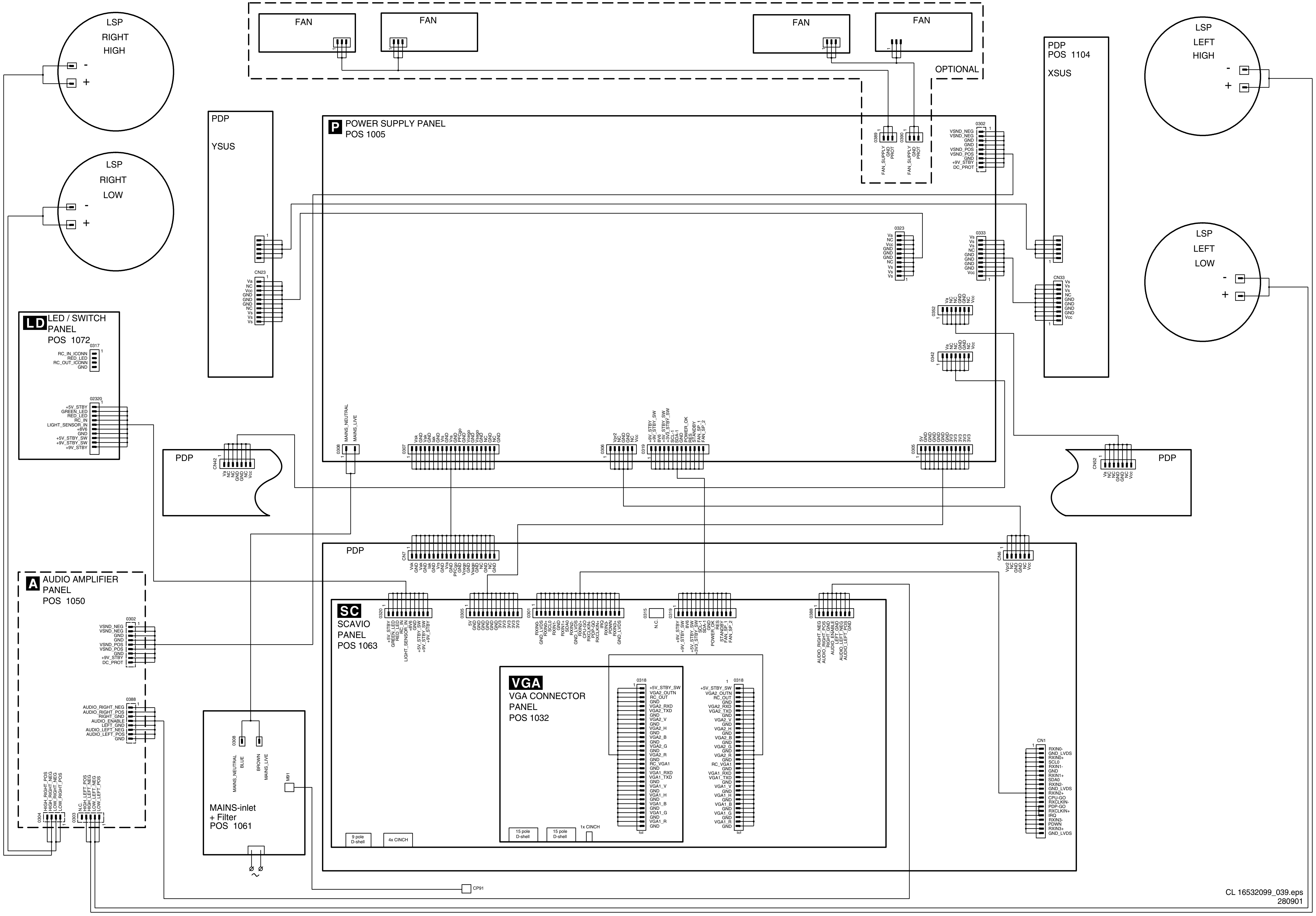
Below some failure symptoms are given, followed by a repair tip.

- **Error code indicates an under- or over voltage protection (errors 70 - 74).** Possible causes:
  - A short-circuit present on PSU.
  - A short-circuit present in PSU load circuit.
  - The converter is not functioning (no start-up, or non short-circuit failure).
- **Set starts up, but switches "off" soon.**
  1. Check the PSU outputs. If no output at all, verify the Power Factor Corrector (= PFC or pre-conditioner) e.g. the relays. When PFC is not switching, the LLC is actively held "off".
  2. If the PFC works, check the V_cego.
  3. If V_cego is high, check V_s on the LLC (Vs_unsw).
  4. If there is no V_s, check pin 15.
  5. If the voltage is OK, check pins 12 and 14.
  6. If there are no pulses, check controller pin 10.
  7. If pin 10 < 1 V, the IC is probably defect.
- **If fuse 1004 (diagram P6) is blown.** Check items 7005 and 7006. If **one** of them is defect, **replace both**!
- **If fuse 1400 (diagram P2) is blown.** Check diode bridge 6600, diodes 6605 and 6606, and MOSFET 7610 (diagram P5).
- **The set does not react on the Remote Control Transmitter.** If the monitor is set (by accident or deliberate) in ICONN-mode (via SAM - Options), and there is no ICONN-Box connected, the RC-signal line to the OTC is interrupted. This can be solved by connecting pin 8 and 9 of the RS232 connector at the rear of the monitor.

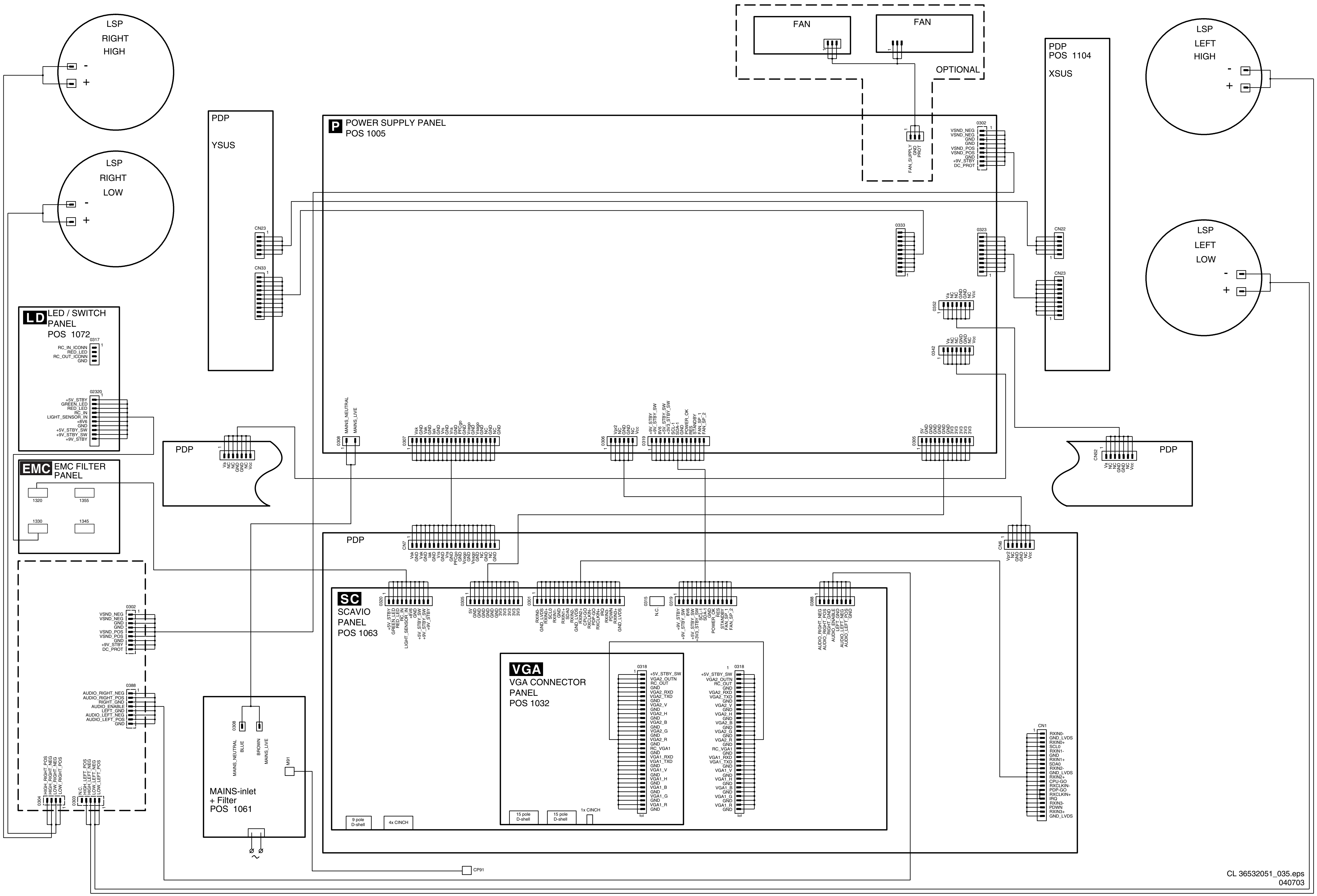
Personal Notes:

6. Block Diagrams, Testpoint Overview, and Waveforms

Wiring Diagram (FM23 AC/FM24 AB)

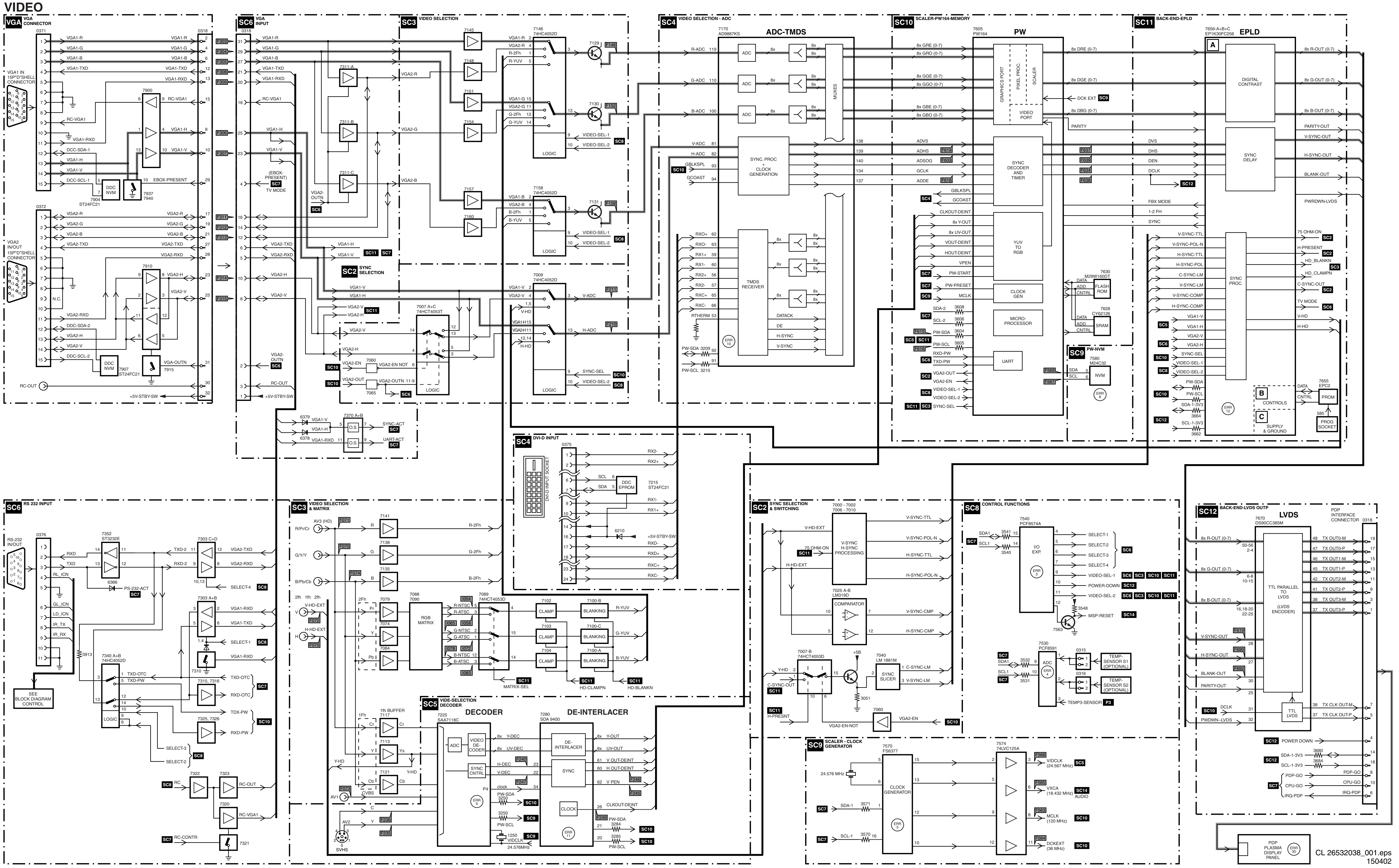

FAN
FAN
FAN
FAN
OPTIONAL
LSP RIGHT HIGH
LSP RIGHT LOW
LSP LEFT HIGH
LSP LEFT LOW
PDP YSUS
CN23
P POWER SUPPLY PANEL POS 1005
0389 FAN_SUPPLY GND PROT
0390 FAN_SUPPLY GND PROT
0302 VSND_NEG VSND_NEG GND GND VSND_POS VSND_POS GND +9V_STBY DC_PROT
0323 Va NC Vcc GND GND GND NC Vs Vs Vs
0333 Vs Vs Vs NC GND GND GND GND Vcc
0352 Va NC NC GND GND NC Vcc
0342 Va NC GND GND NC Vcc
0308 MAINS_NEUTRAL MAINS_LIVE
0307 Vsk GND Vsk GND Vsk GND Vra GND Vra PFCgo GND Vcago GND Vcago GND NC GND
0306 Vpr2 NC GND NC Vcc
0319 +9V_STBY +9V_STBY_SW +5V_STBY_SW 8V6 +3V3_STBY_SW SCL-1 SDA-1 GND POWER_OK RES STANDBY FAN_SP_1 FAN_SP_2
0305 5V GND GND GND GND GND 3V3 3V3 3V3 3V3
PDP POS 1104 XSUS
CN33
LD LED / SWITCH PANEL POS 1072
0317 RC_IN_ICONN RED_LED RC_OUT_ICONN GND
02320 +5V_STBY GREEN_LED RED_LED RC_IN LIGHT_SENSOR_IN +8V6 GND +5V_STBY_SW +9V_STBY_SW +9V_STBY
PDP CN42 Va NC GND NC Vcc
PDP CN62 Va NC GND NC Vcc
PDP CN7 Vsk GND Vsk GND Vsk GND Vra GND Vra PFCgo GND Vcago GND Vcago GND NC GND
CN6 Vpr2 NC GND NC Vcc
A AUDIO AMPLIFIER PANEL POS 1050
0302 VSND_NEG VSND_NEG GND GND VSND_POS VSND_POS GND +9V_STBY DC_PROT
0388 AUDIO_RIGHT_NEG AUDIO_RIGHT_POS RIGHT_GND AUDIO_ENABLE LEFT_GND AUDIO_LEFT_NEG AUDIO_LEFT_POS GND
0304 HIGH_RIGHT_POS HIGH_RIGHT_NEG LOW_RIGHT_NEG LOW_RIGHT_POS
0303 N.C. HIGH_LEFT_POS HIGH_LEFT_NEG LOW_LEFT_NEG LOW_LEFT_POS
SC SCAVIO PANEL POS 1063
0320 +5V_STBY GREEN_LED RED_LED RC_IN LIGHT_SENSOR_IN +8V6 GND +5V_STBY_SW +9V_STBY_SW +9V_STBY
0305 5V GND GND GND GND GND 3V3 3V3 3V3 3V3
0301 RXIN- GND_LVDS RXIN0+ SCL0 GND RXIN1+ SDA0 RXIN2- GND_LVDS CPU-GO RXCLKIN- PDP-GO RXCLKIN+ IRQ RXIN3- PDWN RXIN3+ GND_LVDS
0315 N.C.
0319 +9V_STBY +9V_STBY_SW +5V_STBY_SW 8V6 +3V3_STBY_SW SCL-1 SDA-1 GND POWER_OK RES STANDBY FAN_SP_1 FAN_SP_2
0388 AUDIO_RIGHT_NEG AUDIO_RIGHT_POS RIGHT_GND AUDIO_ENABLE LEFT_GND AUDIO_LEFT_NEG AUDIO_LEFT_POS GND
VGA VGA CONNECTOR PANEL POS 1032
0318 +5V_STBY_SW VGA2_OUTN RC_OUT GND VGA2_RXD VGA2_TXD GND VGA2_V GND VGA2_H GND VGA2_B GND VGA2_G GND VGA2_R GND RC_VGA1 GND VGA1_RXD VGA1_TXD GND VGA1_V GND VGA1_H GND VGA1_B GND VGA1_G GND VGA1_R GND
0318 +5V_STBY_SW VGA2_OUTN RC_OUT GND VGA2_RXD VGA2_TXD GND VGA2_V GND VGA2_H GND VGA2_B GND VGA2_G GND VGA2_R GND RC_VGA1 GND VGA1_RXD VGA1_TXD GND VGA1_V GND VGA1_H GND VGA1_B GND VGA1_G GND VGA1_R GND
15 pole D-shell
15 pole D-shell
1x CINCH
9 pole D-shell
4x CINCH
CN1 RXIN0- GND_LVDS RXIN0+ SCL0 RXIN1- GND RXIN1+ SDA0 RXIN2- GND_LVDS RXIN2+ CPU-GO RXCLKIN- PDP-GO RXCLKIN+ IRQ RXIN3- PDWN RXIN3+ GND_LVDS
MAINS-inlet + Filter POS 1061
0308 MAINS_NEUTRAL BLUE BROWN MAINS_LIVE
M61
CP91
CL 16532099_039.eps
280901

Wiring Diagram (FM33 AA)


LSP RIGHT HIGH
- +
LSP RIGHT LOW
- +
PDP
YSUS
CN23
CN33
FAN
FAN
OPTIONAL
P POWER SUPPLY PANEL POS 1005
FAN_SUPPLY GND PROT
0302
VSND_NEG VSND_NEG GND GND VSND_POS VSND_POS GND +9V_STBY DC_PROT
0333
0323
0352 Va NC NC GND GND NC Vcc
0342 Va NC NC GND GND NC Vcc
PDP POS 1104
XSUS
CN22
CN23
LSP LEFT HIGH
- +
LSP LEFT LOW
- +
LD LED / SWITCH PANEL POS 1072
0317
RC_IN_ICONN RED_LED RC_OUT_ICONN GND
02320
+5V_STBY GREEN_LED RED_LED RC_IN LIGHT_SENSOR_IN +8V6 GND +5V_STBY_SW +9V_STBY_SW +9V_STBY
EMC EMC FILTER PANEL
1320 1355 1330 1345
PDP
Va NC NC GND GND NC Vcc
0308 MAINS_NEUTRAL MAINS_LIVE
0307 Vsk GND Vak GND Iak GND Vrs GND Vra GND PFCgo GND Vcego GND Vsago GND NC GND NC GND
0306 Vpr2 NC GND GND NC Vcc
0319 +9V_STBY +9V_STBY_SW 8V6 +5V_STBY_SW +3V3_STBY_SW SCL-1 SDA-1 GND POWER_OK RES STANDBY FAN_SP_1 FAN_SP_2
0305 5V GND GND GND GND GND GND 3V3 3V3 3V3 3V3 3V3
CN62 Va NC NC GND GND NC Vcc
PDP
PDP
CN7 Vsk GND Vak GND Iak GND Vrs GND Vra GND PFCgo GND Vcego GND Vsago GND NC GND NC GND
CN6 Vpr2 NC GND GND NC Vcc
SC SCAVIO PANEL POS 1063
0320 +5V_STBY GREEN_LED RED_LED RC_IN LIGHT_SENSOR_IN +8V6 GND +5V_STBY_SW +9V_STBY_SW +9V_STBY
0305 5V GND GND GND GND GND GND 3V3 3V3 3V3 3V3 3V3
0301 RXIN0- GND_LVDS RXIN0+ SCL0 RXIN1- GND RXIN1+ SDA0 RXIN2- GND_LVDS RXIN2+ CPU-GO RXCLKIN- PDP-GO RXCLKIN+ IRQ RXIN3- PDWN RXIN3+ GND_LVDS
0315 N.C.
0319 +9V_STBY +9V_STBY_SW 8V6 +5V_STBY_SW +3V3_STBY_SW SCL-1 SDA-1 GND POWER_OK RES STANDBY FAN_SP_1 FAN_SP_2
0388 AUDIO_RIGHT_NEG AUDIO_RIGHT_POS RIGHT_GND AUDIO_ENABLE LEFT_GND AUDIO_LEFT_NEG AUDIO_LEFT_POS GND
0302 VSND_NEG VSND_NEG GND GND VSND_POS VSND_POS GND +9V_STBY DC_PROT
0388 AUDIO_RIGHT_NEG AUDIO_RIGHT_POS RIGHT_GND AUDIO_ENABLE LEFT_GND AUDIO_LEFT_NEG AUDIO_LEFT_POS GND
0304 HIGH_RIGHT_POS HIGH_RIGHT_NEG LOW_RIGHT_NEG LOW_RIGHT_POS
0303 N.C. HIGH_LEFT_POS HIGH_LEFT_NEG LOW_LEFT_NEG LOW_LEFT_POS
0308 MAINS_NEUTRAL BLUE BROWN MAINS_LIVE
M91
MAINS-inlet + Filter POS 1061
~
VGA VGA CONNECTOR PANEL POS 1032
0318
+5V_STBY_SW VGA2_OUTN RC_OUT GND VGA2_RXD VGA2_TXD GND VGA2_V GND VGA2_H GND VGA2_B GND VGA2_G GND VGA2_R GND RC_VGA1 GND VGA1_RXD VGA1_TXD GND VGA1_V GND VGA1_H GND VGA1_B GND VGA1_G GND VGA1_R GND
foil
0318
+5V_STBY_SW VGA2_OUTN RC_OUT GND VGA2_RXD VGA2_TXD GND VGA2_V GND VGA2_H GND VGA2_B GND VGA2_G GND VGA2_R GND RC_VGA1 GND VGA1_RXD VGA1_TXD GND VGA1_V GND VGA1_H GND VGA1_B GND VGA1_G GND VGA1_R GND
foil
9 pole D-shell
4x CINCH
15 pole D-shell
15 pole D-shell
1x CINCH
CN1
RXIN0- GND_LVDS RXIN0+ SCL0 RXIN1- GND RXIN1+ SDA0 RXIN2- GND_LVDS RXIN2+ CPU-GO RXCLKIN- PDP-GO RXCLKIN+ IRQ RXIN3- PDWN RXIN3+ GND_LVDS
CP91
CL 36532051_035.eps
040703

Block Diagram Video (FM23 AC/FM24 AB/FM33 AA)

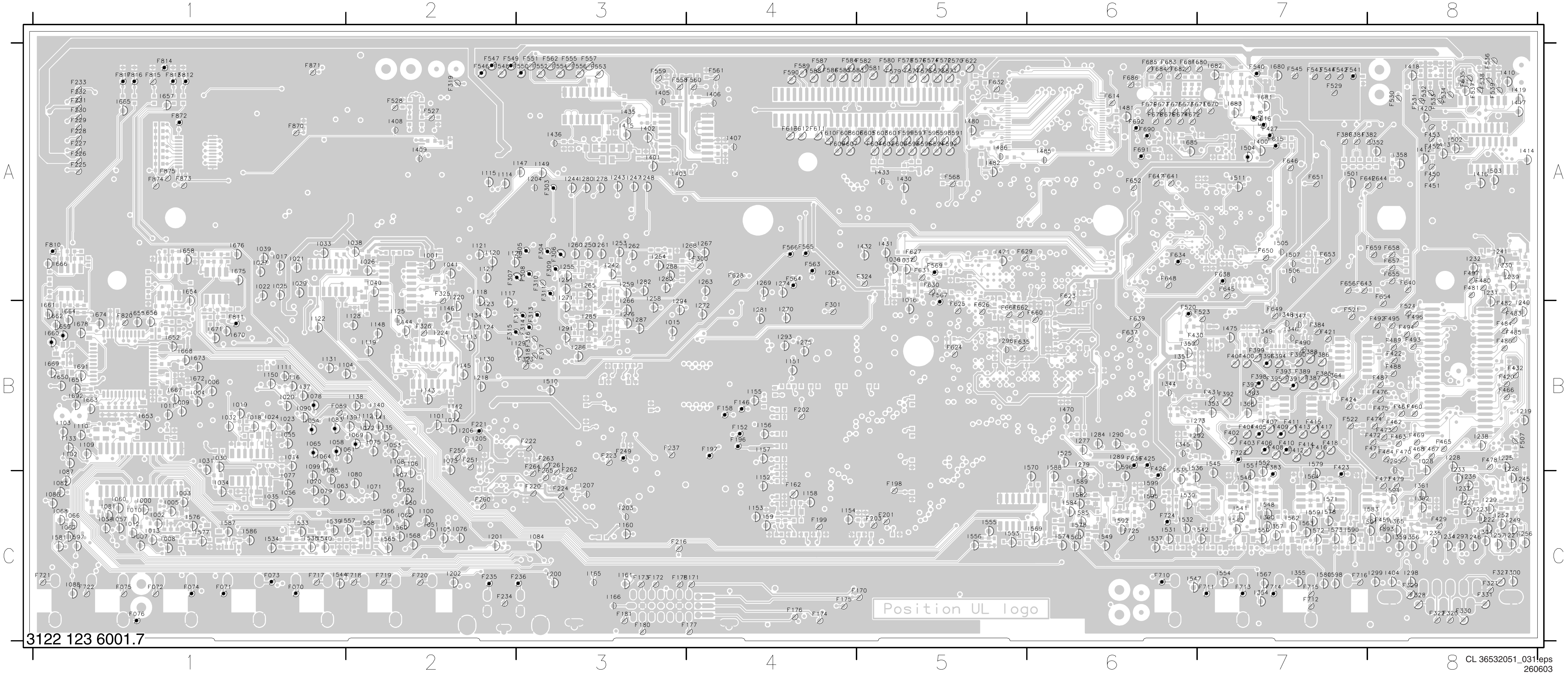
VIDEO


VGA VGA CONNECTOR
SC6 VGA INPUT
SC3 VIDEO SELECTION
SC4 VIDEO SELECTION - ADC
ADC-TMDS
SC10 SCALER-PW164-MEMORY
PW
SC11 BACK-END-EPLD
EPLD
SC2 SYNC SELECTION
SC4 DVI-D INPUT
SC6 RS 232 INPUT
SC3 VIDEO SELECTION & MATRIX
SC5 VIDE-SELECTION DECODER
DECODER
DE-INTERLACER
SC2 SYNC SELECTION & SWITCHING
SC8 CONTROL FUNCTIONS
SC9 SCALER - CLOCK GENERATOR
SC12 BACK-END-LVDS OUTP
LVDS
SC9 PW-NVM
VGA1 IN 15P"D"SHELL CONNECTOR
VGA2 IN/OUT 15P"D"SHELL CONNECTOR
RS-232 IN/OUT
SYNC. PROC + CLOCK GENERATION
TMDS RECEIVER
MUXES
GRAPHICS PORT
PIXEL PROC
SCALER
VIDEO PORT
SYNC DECODER AND TIMER
YUV TO RGB
CLOCK GEN
MICRO-PROCESSOR
UART
DIGITAL CONTRAST
SYNC DELAY
SYNC PROC
CONTROLS
SUPPLY & GROUND
RGB MATRIX
CLAMP
BLANKING
V-SYNC H-SYNC PROCESSING
COMPARATOR
SYNC SLICER
I/O EXP.
CLOCK GENERATOR
TTL PARALLEL TO LVDS (LVDS ENCODER)
TTL LVDS
PDP INTERFACE CONNECTOR
PDP PLASMA DISPLAY PANEL
SEE BLOCK DIAGRAM CONTROL
TEMP-SENSOR S1 (OPTIONAL)
TEMP-SENSOR S2 (OPTIONAL)

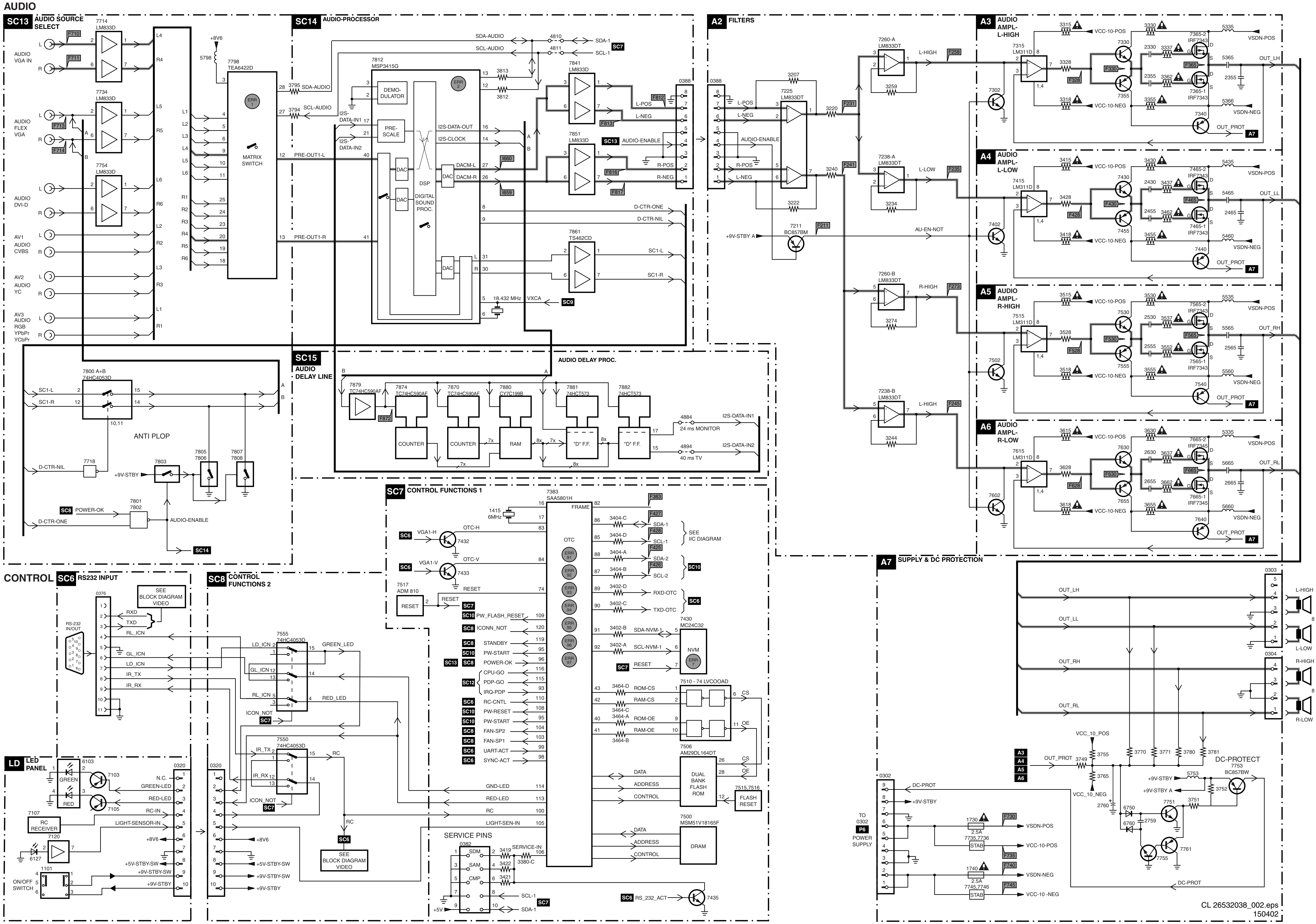
CL 26532038_001.eps
150402

Testpoint Overview: SCAVIO Panel

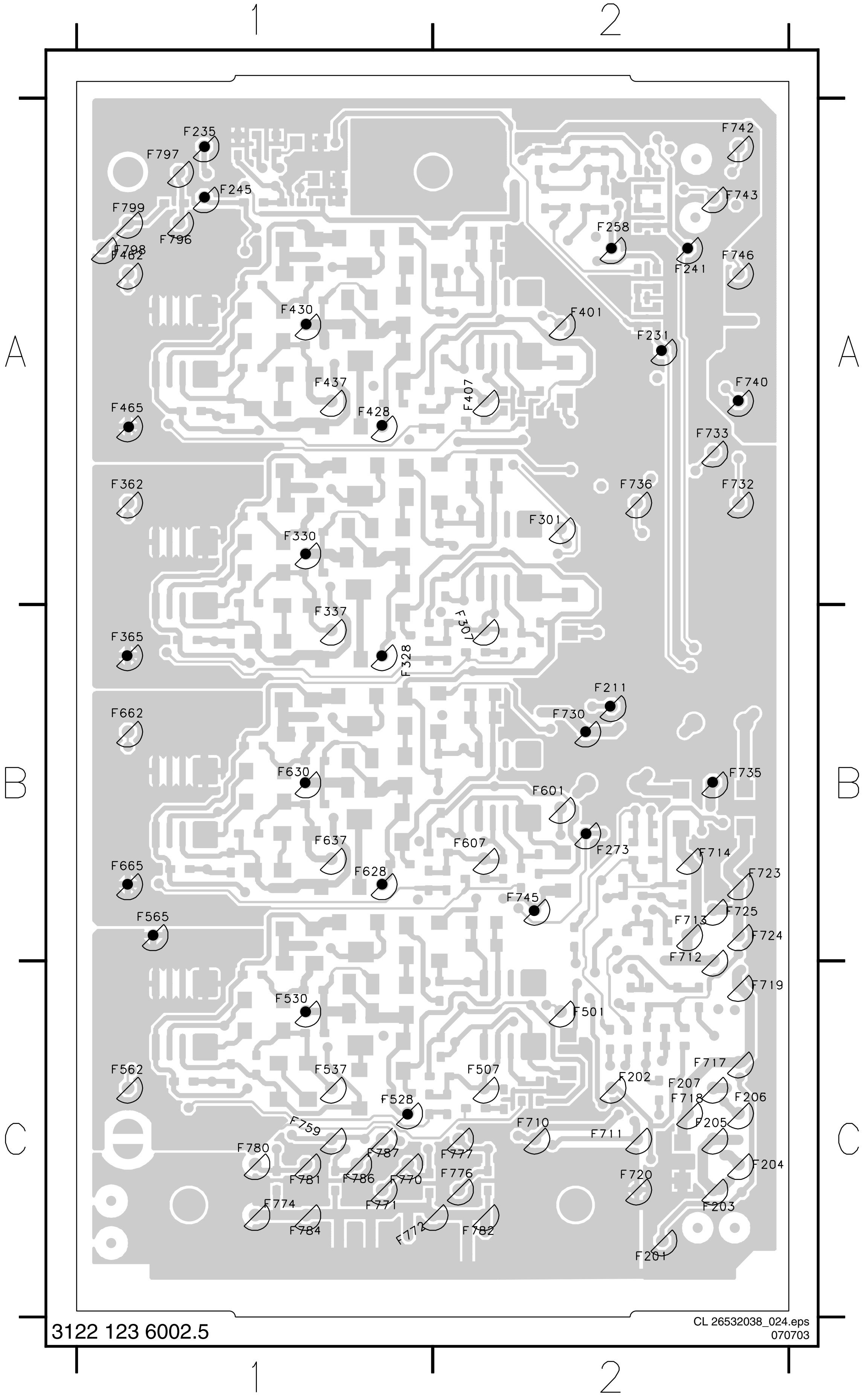
F070	C1
F071	C1
F072	C1
F073	C1
F074	C1
F075	C1
F076	C1
F089	B1
F146	B4
F152	B4
F158	B4
F162	C4
F170	C5
F171	C4
F172	C3
F173	C3
F174	C4
F175	C4
F176	C4
F177	C4
F178	C3
F180	C3
F181	C3
F196	B4
F197	B4
F198	C5
F199	C4
F201	C5
F202	B4
F203	C5
F210	C3
F211	C3
F216	C3
F220	C3
F221	B2
F222	B3
F223	B3
F224	C3
F225	A1
F226	A1
F227	A1
F228	A1
F229	A1
F230	A1
F231	A1
F232	A1
F233	A1
F234	C2
F235	C2
F236	C3
F237	B3
F240	B3
F241	B3
F242	B3
F245	B5
F246	B5
F247	B5
F249	B3
F250	B2
F251	B2
F260	C2
F261	C3
F262	C3
F263	B3
F264	C3
F265	C3
F300	A4
F301	B4
F303	A3
F304	A3
F305	A3
F306	A3
F307	A3
F308	A3
F309	A3
F310	A3
F311	A3
F312	B3
F313	B3
F314	B3
F315	B2
F316	B3
F317	B3
F318	B3
F319	A2
F320	C8
F321	C8
F322	C8
F323	B3
F324	A5
F325	A2
F326	B2
F327	C8
F328	C8
F329	C8
F330	C8
F331	C8
F380	A7
F381	A7
F382	A8
F383	C7
F384	B7
F385	B7
F386	B7
F387	B7
F388	B7
F389	B7
F390	B7
F391	B7
F392	B7
F393	B7
F394	B7
F395	B7
F396	B7
F397	B7
F398	B7
F399	B7
F400	B7
F401	B7
F402	B7
F403	B7
F404	B7
F405	B7
F406	B7
F407	B7
F408	B7
F409	B7
F410	B7
F411	B7
F412	B7
F413	B7
F414	B7
F415	B7
F416	B7
F417	B7
F418	B7
F419	B7
F420	B8
F421	B7
F422	B8
F423	C7
F424	B7
F425	B6
F426	C6
F427	A7
F428	A7
F429	C8
F430	B6
F431	B7
F432	B8
F450	A8
F451	A8
F452	A8
F453	A8
F459	C8
F460	B8
F461	B8
F462	B8
F463	B8
F464	B8
F465	B8
F466	B8
F467	B8
F468	B8
F469	B8
F470	B8
F471	B8
F472	B8
F473	B8
F474	B8
F475	B8
F476	B8
F477	C8
F478	B8
F479	C8
F480	A8
F481	A8
F482	B8
F483	B8
F484	B8
F485	B8
F486	B8
F487	B8
F488	B8
F489	B8
F490	B7
F492	B8
F493	B8
F494	B8
F495	B8
F496	B8
F497	A8
F506	B8
F507	B8
F520	B6
F521	B7
F522	B7
F523	B7
F524	B8
F525	B6
F526	B6
F527	A2
F528	A2
F529	A7
F530	A8
F531	A8
F532	A8
F533	A8
F534	A8
F535	A8
F536	A8
F537	A8
F538	A8
F539	A8
F540	A7
F541	A7
F542	A7
F543	A7
F544	A7
F545	A7
F546	A2
F547	A2
F548	A2
F549	A2
F550	A3
F551	A3
F552	A3
F553	A3
F554	A3
F555	A3
F556	A3
F557	A3
F558	A3
F559	A3
F560	A4
F561	A4
F562	A3
F563	A4
F564	A4
F565	A4
F566	A4
F567	B5
F568	A5
F569	A5
F570	A5
F571	A5
F572	A5
F573	A5
F574	A5
F575	A5
F576	A5
F577	A5
F578	A5
F579	A5
F580	A5
F581	A5
F582	A5
F583	A4
F584	A4
F585	A4
F586	A4
F587	A4
F588	A4
F589	A4
F590	A4
F591	A5
F592	A5
F593	A5
F594	A5
F595	A5
F596	A5
F597	A5
F598	A5
F599	A5
F600	A5
F601	A5
F602	A5
F603	A5
F604	A5
F605	A5
F606	A4
F607	A4
F608	A4
F609	A4
F610	A4
F611	A4
F612	A4
F613	A4
F614	A6
F615	A7
F616	A7
F617	A5
F618	B4
F619	B5
F620	B5
F621	B4
F622	A5
F623	B6
F624	B5
F625	B5
F626	B5
F627	A5
F628	A4
F629	A5
F630	A5
F631	A5
F632	A5
F633	B5
F634	A6
F635	B5
F636	B6
F637	B6
F638	A7
F639	B6
F640	A8
F641	A6
F642	A8
F643	A7
F644	A8
F645	A7
F646	A7
F647	A6
F648	A6
F649	B7
F650	A7
F651	A7
F652	A6
F653	A7
F654	B8
F655	A8
F656	A7
F657	A8
F658	A8
F659	A8
F660	B6
F661	B5
F662	B5
F670	A7
F671	A7
F672	A6
F673	A6
F674	A6
F675	A6
F676	A6
F677	A6
F678	A6
F679	A6
F680	A7
F681	A6
F682	A6
F683	A6
F684	A6
F685	A6
F686	A6
F690	A6
F691	A6
F692	A6
F710	C6
F711	C7
F712	C7
F713	C7
F714	C7
F715	C7
F716	C7
F717	C1
F718	C2
F719	C2
F720	C2
F721	C1
F722	C1
F723	B7
F724	C6
F725	C6
F810	A1
F811	B1
F812	A1
F813	A1
F814	A1
F815	A1
F816	A1
F817	A1
F820	B1
F870	A1
F871	A1
F872	A1
F873	A1
F874	A1
F875	A1
I001	A2
I0010	C1
I002	C1
I003	C1
I004	B1
I005	C1
I006	B1
I007	C1
I008	C1
I009	B1
I010	C1
I011	B1
I012	C1
I013	C1
I014	B1
I015	B3
I016	B5
I017	A1
I018	B1
I019	B1
I020	B1
I021	A1
I022	A1
I023	B1
I024	B1
I025	A1
I026	A2
I027	A1
I028	B8
I029	A1
I030	B1
I031	B1
I032	B1
I033	A1
I034	C1
I035	C1
I036	A5
I037	A5
I038	A2
I039	A1
I040	A2
I041	A2
I050	C2
I051	C2
I052	C2
I053	B2
I054	B1
I055	B1
I056	C1
I057	C1
I058	B1
I059	C1
I060	C1
I061	B2
I062	C2
I063	C1
I064	B1
I065	B1
I066	C1
I067	C1
I068	C1
I069	B2
I070	C1
I071	C2
I072	B2
I073	B2
I074	B2
I075	B2
I076	C2
I077	C1
I078	B1
I079	C1
I080	C2
I081	C1
I082	C1
I083	B1
I084	C3
I085	C1
I086	C1
I087	C1
I088	C1
I090	B1
I099	C1
I100	C2
I101	B2
I102	B1
I103	B1
I104	B1
I105	C2
I106	C2
I107	C2
I108	B2
I109	B1
I110	B1
I111	B1
I112	B2
I113	B2
I114	A2
I115	A2
I116	B1
I117	B2
I118	B2
I119	B2
I120	A2
I121	A2
I122	B1
I123	B2
I124	B2
I125	B2
I126	A2
I127	A2
I128	B2
I129	B3
I130	B2
I131	B1
I133	B1
I134	B2
I135	B2
I137	B1
I138	B2
I139	B2
I140	B2
I141	B2
I142	B2
I143	B2
I144	B2
I145	B2
I146	B2
I147	A3
I148	B2
I149	A3
I150	B1
I151	B4
I152	C4
I153	C4
I154	C4
I155	B4
I156	B4
I157	B4
I158	C4
I159	C4
I160	C3
I161	C3
I165	C3
I166	C3
I200	C3
I201	C2
I202	C2
I203	C3
I204	A3
I205	B2
I206	B2
I207	C3
I218	B2
I219	B8
I220	B2
I221	C8
I222	C8
I223	C8
I224	B2
I225	B8
I226	C8
I227	C8
I228	B8
I229	C8
I230	A8
I231	B8
I232	A8
I233	C8
I234	C8
I235	C8
I236	C8
I237	C8
I238	B8
I239	A8
I240	B8
I241	A8
I242	A3
I243	A3
I244	A3
I245	C8
I246	C8
I247	A3
I248	A3
I249	C8
I250	A3
I251	A3
I252	C8
I253	A3
I254	A3
I255	A3
I256	C8
I257	C8
I258	B3
I259	A3
I260	A3
I261	A3
I262	A3
I263	A4
I264	A4
I265	A3
I266	B3
I267	A4
I268	A4
I269	A4
I270	B4
I271	B3
I272	B4
I273	B7
I274	A4
I275	B4
I276	B3
I277	B6
I278	A3
I279	C6
I280	A3
I281	B4
I282	A3
I283	A3
I284	B6
I285	B3
I286	B3
I287	B3
I288	A3
I289	B6
I290	B6
I291	B3
I292	B6
I293	B4
I294	B3
I295	B8
I296	B5
I297	C8
I298	C8
I299	C8
I300	C8
I301	C8
I344	B6
I345	B6
I346	B7
I347	B7
I348	B7
I349	B7
I350	B6
I351	B6
I352	A8
I353	B7
I354	C7
I355	C7
I356	C8
I357	C7
I358	A8
I359	C8
I360	C7
I361	C8
I362	C8
I363	B7
I364	B7
I365	C8
I366	B7
I400	A7
I401	A3
I402	A3
I403	A3
I404	C8
I405	A3
I406	A4
I407	A4
I408	A2
I409	A2
I410	A8
I411	A8
I412	A8
I413	A8
I414	A8
I415	A3
I416	A8
I417	A8
I418	A8
I419	A8
I420	A8
I430	A5
I431	A5
I432	A5
I433	A5
I435	A3
I436	A3
I470	B6
I471	A5
I475	B7
I480	A5
I481	A6
I482	A5
I485	A6
I486	A5
I501	A7
I502	A8
I503	A8
I504	A7
I505	A7
I506	A7
I507	A7
I510	B3
I511	A7
I525	B6
I530	C6
I531	C6
I532	C6
I533	C1
I534	C1
I535	C6
I536	C6
I537	C6
I538	C1
I539	C1
I540	C1
I541	C7
I542	C7
I543	C7
I544	C1
I545	C7
I546	C7
I547	C6
I548	C7
I549	C6
I550	C7
I551	C7
I552	C7
I553	C5
I554	C7
I555	C5
I556	C5
I557	C2
I558	C2
I559	C7
I560	C2
I561	C6
I562	C7
I563	C7
I564	C7
I565	C2
I566	C2
I567	C7
I568	C2
I569	C6
I570	C6
I571	C7
I572	C7
I573	C7
I574	C6
I575	C6
I576	C1
I577	C1
I578	C7
I579	C7
I580	C7
I581	C1
I582	C6
I583	C8
I584	C6
I585	C6
I586	C1
I587	C1
I588	C6
I589	C6
I590	C7
I591	C8
I592	C6
I593	C8
I594	C8
I595	C6
I596	C6
I597	C1
I598	C7
I599	C6
I650	B1
I651	B1
I652	B1
I653	B1
I654	B1
I655	B1
I656	B1
I657	A1
I658	A1
I659	B1
I660	B1
I661	B1
I662	B1
I663	B1
I664	B1
I665	A1
I666	A1
I667	B1
I668	B1
I669	B1
I670	B1
I671	B1
I672	B1
I673	B1
I674	B1
I675	A1
I676	A1
I678	B1
I680	A7
I681	A7
I682	A7
I683	A7
I685	A6
I691	B1
I692	B1



Block Diagram Audio (FM23 AC/FM24 AB/FM33 AA)


AUDIO
SC13 AUDIO SOURCE SELECT
7714 LM833D
7734 LM833D
7754 LM833D
AUDIO VGA IN
AUDIO FLEX VGA
AUDIO DVI-D
AV1 AUDIO CVBS
AV2 AUDIO YC
AV3 AUDIO RGB YPbPr YCbPr
SC14 AUDIO-PROCESSOR
7798 TEA6422D
MATRIX SWITCH
7812 MSP3415G
DEMO-DULATOR
PRE-SCALE
DSP
DIGITAL SOUND PROC.
DAC
SDA-AUDIO
SCL-AUDIO
PRE-OUT1-L
PRE-OUT1-R
I2S-DATA-OUT
I2S-CLOCK
DACM-L
DACM-R
18.432 MHz
VXCA
7841 LM833D
7851 LM833D
7861 TS462CD
AUDIO-ENABLE
L-POS
L-NEG
R-POS
R-NEG
D-CTR-ONE
D-CTR-NIL
SC1-L
SC1-R
SC15 AUDIO - DELAY LINE
AUDIO DELAY PROC.
7879 TC74HC590AF
7874 TC74HC590AF
7870 TC74HC590AF
7880 CY7C199B
7881 74HCT573
7882 74HCT573
COUNTER
RAM
"D" F.F.
24 ms MONITOR
40 ms TV
I2S-DATA-IN1
I2S-DATA-IN2
7800 A+B 74HC4053D
ANTI PLOP
POWER-OK
A2 FILTERS
7225 LM833DT
7260-A LM833DT
7238-A LM833DT
7260-B LM833DT
7238-B LM833DT
7211 BC857BM
+9V-STBY A
AU-EN-NOT
L-HIGH
L-LOW
R-HIGH
R-LOW
A3 AUDIO AMPL- L-HIGH
A4 AUDIO AMPL- L-LOW
A5 AUDIO AMPL- R-HIGH
A6 AUDIO AMPL- R-LOW
7315 LM311D
7365-2 IRF7343
7365-1 IRF7343
VCC-10-POS
VCC-10-NEG
VSDN-POS
VSDN-NEG
OUT_PROT
OUT_LH
OUT_LL
OUT_RH
OUT_RL
A7 SUPPLY & DC PROTECTION
8 Ω
DC-PROTECT
7753 BC857BW
VCC_10_POS
VCC_10_NEG
TO 0302 P6 POWER SUPPLY
2.5A
STAB
CONTROL
SC6 RS232 INPUT
SEE BLOCK DIAGRAM VIDEO
RS-232 IN/OUT
RXD
TXD
SC8 CONTROL FUNCTIONS 2
7555 74HC4053D
7550 74HC4053D
GREEN_LED
RED_LED
SC7 CONTROL FUNCTIONS 1
7383 SAA5801H
OTC
1415 6MHz
7432
7433
7517 ADM 810
RESET
SEE IIC DIAGRAM
7430 MC24C32
NVM
7510 - 74 LVC00AD
7506 AM29DL164DT
DUAL BANK FLASH ROM
FLASH RESET
7500 MSM51V18165F
DRAM
SERVICE PINS
7435
LD LED PANEL
GREEN
RED
RC RECEIVER
ON/OFF SWITCH
CL 26532038_002.eps
150402

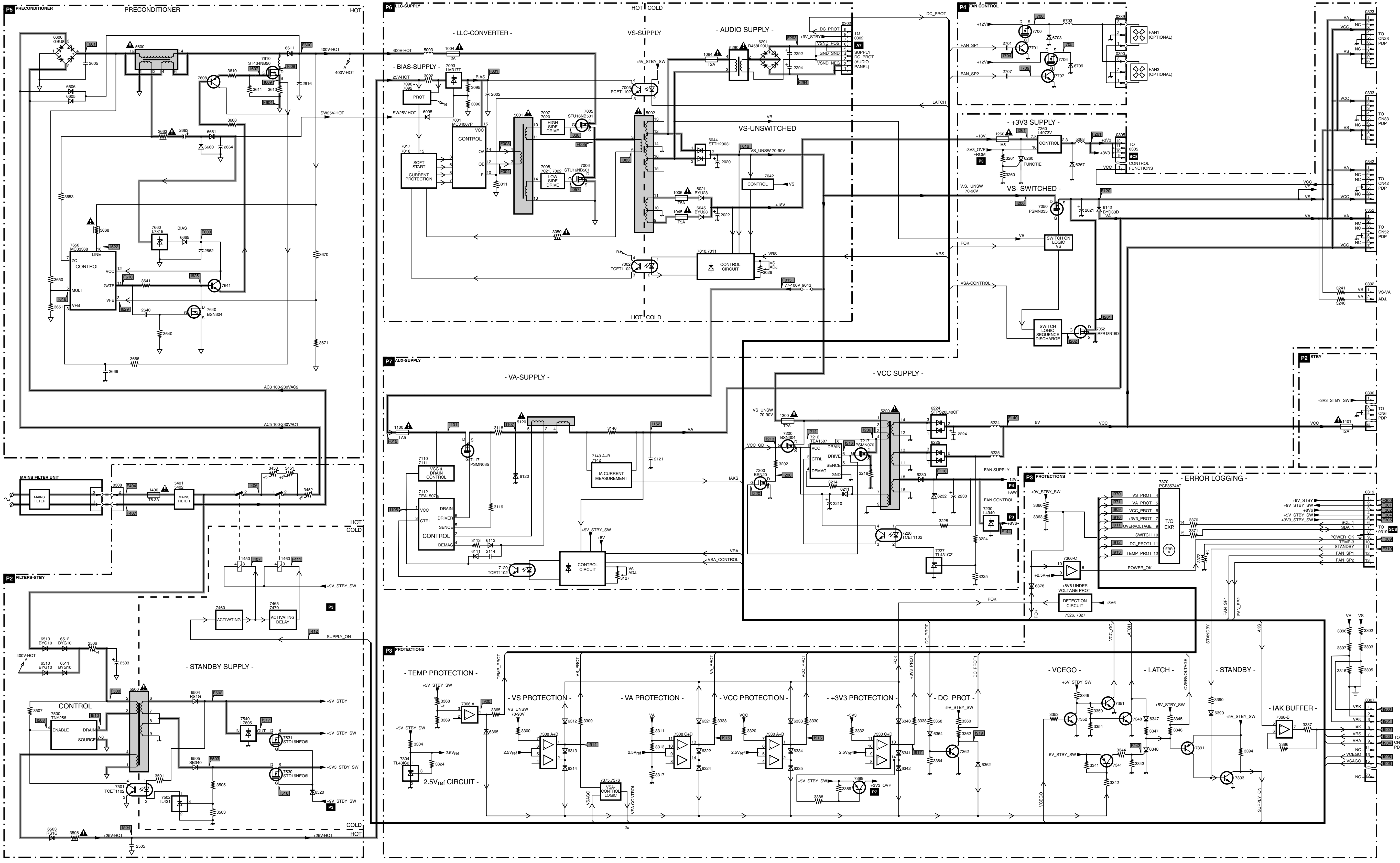
Testpoint Overview: Audio Amplifier Panel


1
2
A
B
C
F235
F797
F245
F799
F796
F798
F462
F430
F401
F258
F241
F742
F743
F746
F231
F437
F407
F428
F740
F465
F733
F362
F736
F732
F301
F330
F337
F307
F328
F365
F211
F730
F662
F630
F735
F601
F273
F637
F607
F714
F665
F628
F723
F745
F565
F725
F713
F724
F712
F719
F530
F501
F562
F537
F507
F717
F202
F207
F718
F206
F528
F759
F710
F711
F205
F780
F787
F777
F781
F786
F770
F776
F204
F720
F774
F771
F203
F784
F772
F782
F201
3122 123 6002.5
CL 26532038_024.eps
070703

F201	C2
F201	C2
F202	C2
F202	C2
F203	C2
F203	C2
F204	C2
F204	C2
F205	C2
F205	C2
F206	C2
F206	C2
F207	C2
F207	C2
F211	B2
F211	B2
F231	A2
F231	A2
F235	A1
F235	A1
F241	A2
F241	A2
F245	A1
F245	A1
F258	A2
F258	A2
F273	B2
F273	B2
F301	A2
F301	A2
F307	B2
F307	B2
F328	B1
F328	B1
F330	A1
F330	A1
F365	B1
F365	B1
F401	A2
F401	A2
F407	A2
F407	A2
F428	A1
F428	A1
F430	A1
F430	A1
F465	A1
F465	A1
F501	C2
F501	C2
F507	C2
F507	C2
F528	C1
F528	C1
F530	C1
F530	C1
F565	B1
F565	B1
F601	B2
F601	B2
F607	B2
F607	B2
F628	B1
F628	B1
F630	B1
F630	B1
F665	B1
F665	B1
F710	C2
F710	C2
F711	C2
F711	C2
F712	B2
F712	B2
F713	B2
F713	B2
F714	B2
F714	B2
F717	C2
F717	C2
F718	C2
F718	C2
F719	C2
F719	C2
F720	C2
F720	C2
F723	B2
F723	B2
F724	B2
F724	B2
F725	B2
F725	B2
F730	B2
F730	B2
F732	A2
F732	A2
F733	A2
F733	A2
F735	B2
F735	B2
F736	A2
F736	A2
F740	A2
F740	A2
F742	A2
F742	A2
F743	A2
F743	A2
F745	B2
F745	B2
F746	A2
F746	A2
F759	C1
F759	C1
F770	C1
F770	C1
F771	C1
F771	C1
F772	C1
F772	C1
F774	C1
F774	C1
F776	C2
F776	C2
F777	C2
F777	C2
F780	C1
F780	C1
F781	C1
F781	C1
F782	C2
F782	C2
F784	C1
F784	C1
F786	C1
F786	C1
F787	C1
F787	C1
F796	A1
F796	A1
F797	A1
F797	A1
F798	A1
F798	A1
F799	A1
F799	A1

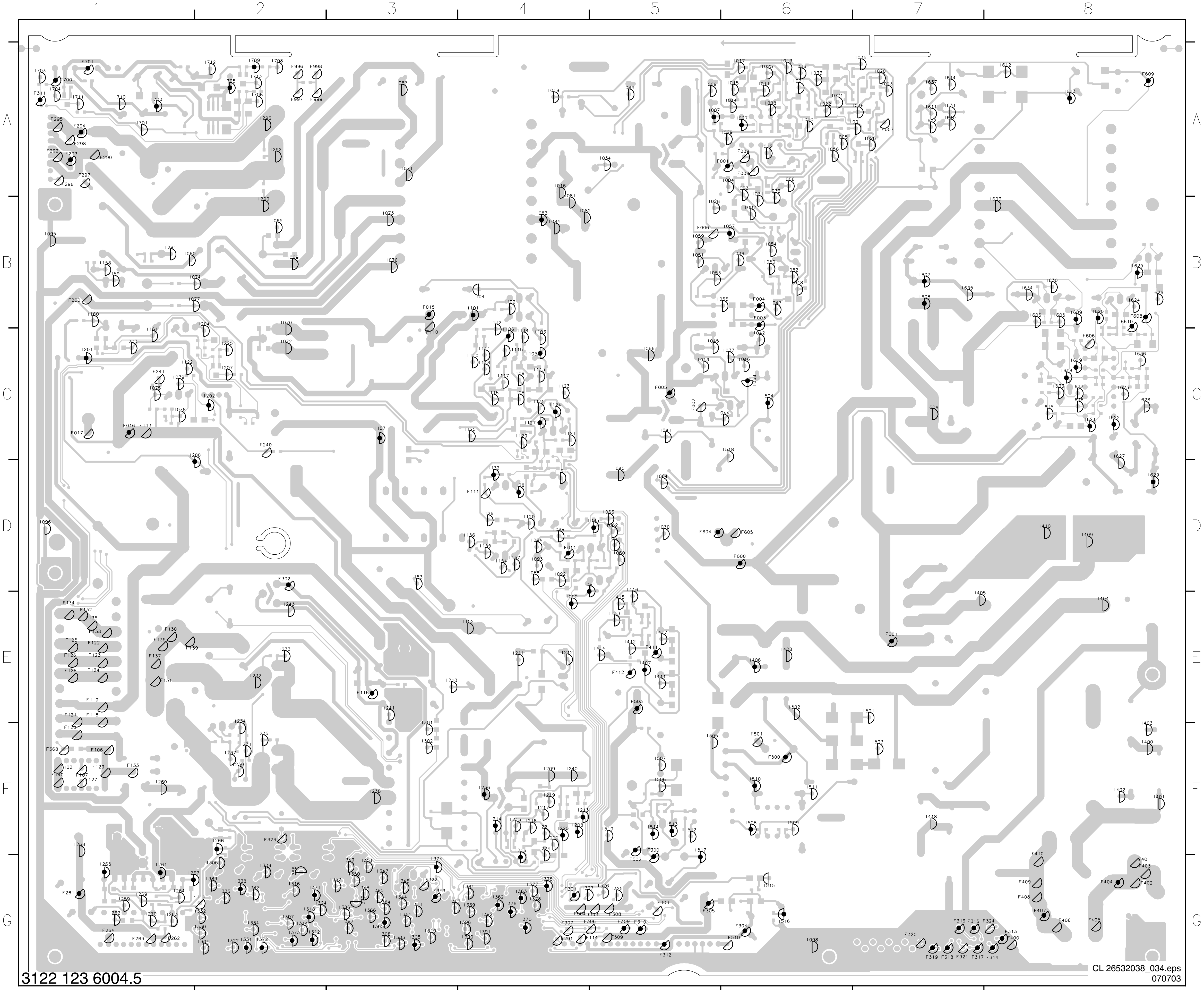
Personal Notes:

Block Diagram Power Supply (FM23 AC)


P5 PRECONDITIONER
PRECONDITIONER
HOT
P6 LLC-SUPPLY
HOT COLD
- LLC-CONVERTER -
VS-SUPPLY
- AUDIO SUPPLY -
- BIAS-SUPPLY -
PROT
CONTROL
SOFT START + CURRENT PROTECTION
HIGH SIDE DRIVE
LOW SIDE DRIVE
VS-UNSWITCHED
CONTROL
CONTROL CIRCUIT
TO 0302 SUPPLY DC. PROT. (AUDIO PANEL)
P4 FAN CONTROL
FAN1 (OPTIONAL)
FAN2 (OPTIONAL)
- +3V3 SUPPLY -
CONTROL
TO 0305 CONTROL FUNCTIONS
VS- SWITCHED -
SWITCH ON LOGIC VS
SWITCH LOGIC SEQUENCE DISCHARGE
TO CN23 PDP
TO CN33 PDP
TO CN42 PDP
TO CN52 PDP
VS-VA ADJ.
P2 STBY
TO CN6 PDP
MAINS FILTER UNIT
MAINS FILTER
P7 AUX-SUPPLY
- VA-SUPPLY -
VCC & DRAIN CONTROL
CONTROL
IA CURRENT MEASUREMENT
CONTROL CIRCUIT
- VCC SUPPLY -
P3 PROTECTIONS
- ERROR LOGGING -
T/O EXP.
DETECTION CIRCUIT
+8V6 UNDER VOLTAGE PROT.
TO 0319 CONTROL FUNCTIONS 2
P2 FILTERS-STBY
ACTIVATING
ACTIVATING DELAY
- STANDBY SUPPLY -
CONTROL
ENABLE
DRAIN
SOURCE
COLD
HOT
P3 PROTECTIONS
- TEMP PROTECTION -
2.5Vref CIRCUIT -
- VS PROTECTION -
- VA PROTECTION -
- VCC PROTECTION -
- +3V3 PROTECTION -
- DC_PROT -
VSA CONTROL LOGIC
- VCEGO -
- LATCH -
- STANDBY -
- IAK BUFFER -
TO CN7 PDP

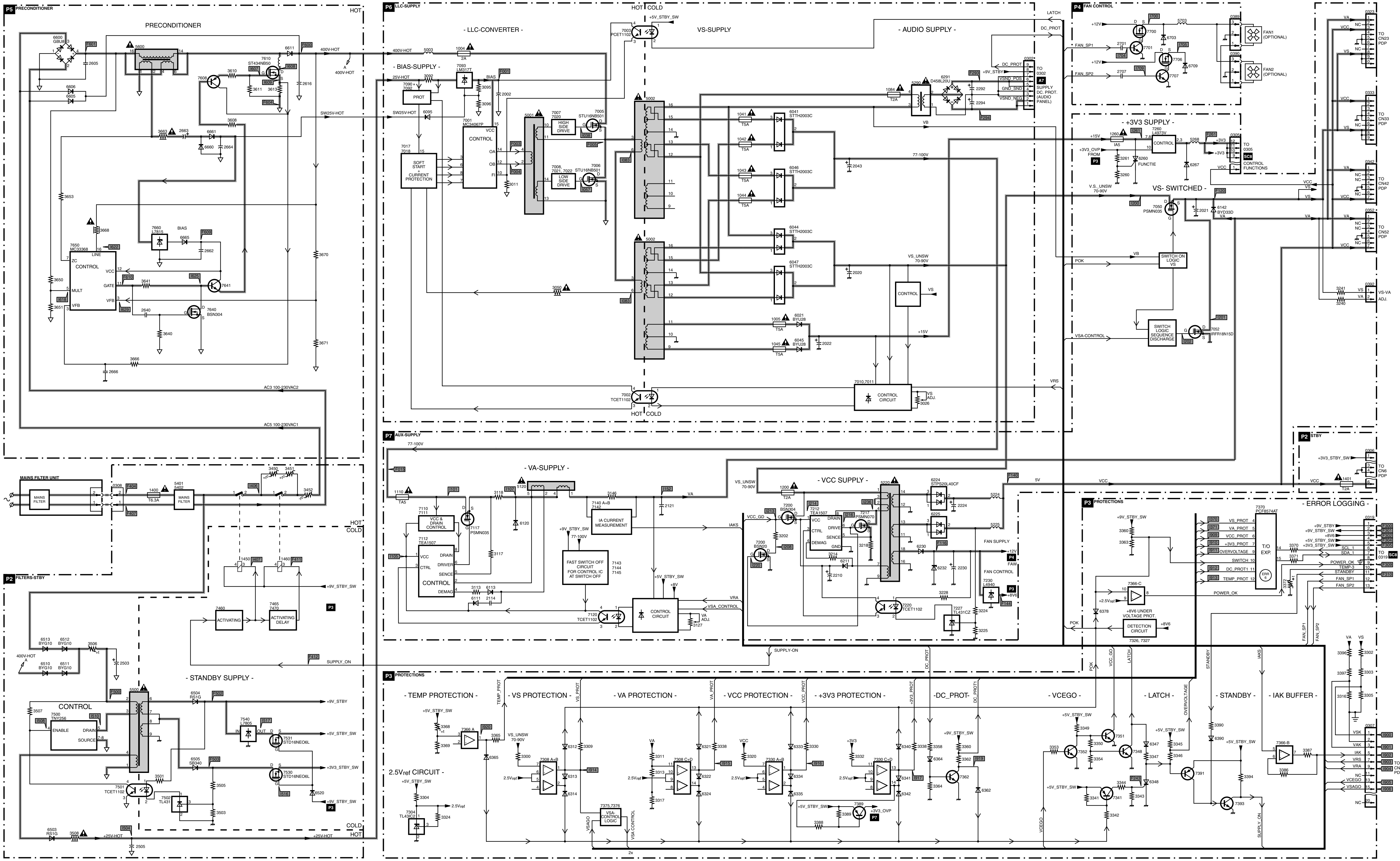
CL 26532038_003.eps
150402

Testpoint Overview Power Supply (FM23AC)



F001	A6	I007	A6	I075	C2	I204	B2	I325	G5	I501	E7	I904	G7
F002	C6	I007	A6	I075	C2	I204	B2	I325	G5	I501	E7	I905	G7
F003	B6	I008	A6	I076	B4	I207	C2	I326	G5	I502	E7	I906	G8
F004	B6	I008	A6	I076	B4	I207	C2	I326	G5	I502	E7		
F005	C6	I009	A6	I077	B2	I208	F5	I327	G5	I503	F7		
F006	B6	I009	A6	I077	B2	I208	F5	I327	G5	I503	F7		
F007	A7	I010	A7	I078	C2	I209	F5	I330	G2	I504	C6		
F008	A6	I010	A7	I078	C2	I209	F5	I330	G2	I504	C6		
F009	A6	I011	A6	I079	C2	I210	E4	I331	G2	I505	F6		
F014	D5	I011	A6	I079	C2	I210	E4	I331	G2	I505	F6		
F015	B4	I012	A6	I080	B2	I211	E5	I332	G2	I506	F6		
F016	C2	I012	A6	I080	B2	I211	E5	I332	G2	I506	F6		
F017	C1	I013	A7	I081	A5	I212	E5	I334	G3	I507	F6		
F102	F1	I013	A7	I081	A5	I212	E5	I334	G3	I507	F6		
F106	F1	I014	A6	I082	B5	I213	F5	I335	G2	I508	F6		
F107	F1	I014	A6	I082	B5	I213	F5	I335	G2	I508	F6		
F110	B4	I015	A6	I083	B5	I214	F4	I338	G2	I509	F7		
F111	D4	I015	A6	I083	B5	I214	F4	I338	G2	I509	F7		
F113	C2	I016	A5	I084	B5	I215	F5	I339	G4	I510	F6		
F114	G5	I016	A5	I084	B5	I215	F5	I339	G4	I510	F6		
F115	G2	I017	A6	I085	D5	I216	F5	I341	G4	I511	F7		
F116	E3	I017	A6	I085	D5	I216	F5	I341	G4	I511	F7		
F118	E1	I018	A7	I088	D5	I217	F5	I342	G3	I512	F6		
F119	E1	I018	A7	I088	D5	I217	F5	I342	G3	I512	F6		
F120	F1	I019	A5	I089	D5	I218	F5	I344	G4	I513	F6		
F121	E1	I019	A5	I089	D5	I218	F5	I344	G4	I513	F6		
F122	E1	I020	A7	I090	D5	I219	F5	I345	G4	I514	F6		
F123	E1	I020	A7	I090	E5	I219	F5	I345	G4	I514	F6		
F124	E1	I021	A7	I091	D5	I220	F5	I347	G4	I515	G6		
F125	E1	I021	A7	I091	D5	I220	F5	I347	G4	I515	G6		
F126	E1	I022	A7	I092	D5	I221	F5	I348	G3	I516	G7		
F127	F1	I022	A7	I092	D5	I221	F5	I348	G3	I516	G7		
F128	E1	I023	A7	I093	D5	I222	F5	I349	F3	I517	F6		
F129	F1	I023	A7	I093	D5	I222	F5	I349	G3	I517	F6		
F130	E2	I024	A7	I094	D5	I224	F5	I350	G3	I518	C6		
F131	E2	I024	A7	I094	D5	I224	F5	I350	G3	I518	C6		
F132	E1	I025	A6	I095	B1	I225	C2	I351	F3	I603	A8		
F133	F2	I025	A6	I095	B1	I225	C2	I351	G3	I603	A8		
F134	E1	I026	A7	I096	D1	I230	F2	I352	G3	I604	C8		
F135	E2	I026	A7	I096	D1	I230	F2	I352	G3	I604	C8		
F136	E1	I027	A6	I098	G7	I231	F2	I362	G4	I605	B9		
F137	E2	I027	A6	I098	G7	I231	F2	I362	G4	I605	B9		
F138	E1	I028	A6	I101	B4	I232	E3	I363	G5	I606	B8		
F139	E2	I028	B6	I101	B4	I232	E3	I363	G5	I606	B8		
F140	F1	I029	A6	I102	B4	I233	E3	I364	G4	I607	B8		
F260	B1	I029	A6	I102	B4	I233	E3	I364	G4	I607	B8		
F261	G1	I030	D6	I103	B5	I234	E2	I365	G4	I608	B8		
F262	G2	I030	D6	I103	C5	I234	E2	I365	G4	I608	B8		
F263	G2	I031	A6	I104	B4	I235	F3	I366	G3	I609	B9		
F264	G1	I031	A6	I104	B4	I235	F3	I366	G3	I609	B9		
F290	A1	I032	A6	I105	C5	I236	F4	I367	G4	I610	A8		
F291	G5	I032	A6	I105	C5	I236	F4	I367	G4	I610	A8		
F292	A1	I033	A7	I106	B4	I237	F2	I370	G5	I611	A8		
F293	A1	I033	A7	I106	B4	I237	F2	I370	G5	I611	A8		
F294	A1	I034	A5	I107	C3	I238	F3	I371	G3	I612	A8		
F295	A1	I034	A5	I107	C3	I238	F3	I371	G3	I612	A8		
F296	A1	I035	A7	I108	C5	I240	F5	I372	G3	I613	A8		
F297	A1	I035	A7	I108	C5	I240	F5	I372	G3	I613	A8		
F298	A1	I036	A7	I109	C5	I241	E4	I373	G3	I614	A9		
F300	F6	I036	A7	I109	C5	I241	E4	I373	G3	I614	A9		
F301	G5	I037	C6	I110	C4	I243	E3	I374	F4	I615	C9		
F302	D3	I037	C6	I110	C4	I243	E3	I374	G4	I615	C9		
F303	G6	I038	C6	I111	C4	I260	F2	I375	G5	I616	C9		
F304	G6	I038	C6	I111	C4	I260	F2	I375	G5	I616	C9		
F305	G6	I039	B6	I112	B4	I261	G2	I376	G4	I617	C9		
F306	G5	I039	B6	I112	B4	I261	G2	I376	G4	I617	C9		
F307	G5	I040	C5	I113	C5	I262	G1	I377	G5	I618	C9		
F308	G5	I040	D5	I113	C5	I262	G1	I377	G5	I618	C9		
F309	G5	I041	C6	I114	B5	I263	G2	I378	G5	I619	C9		
F310	G5	I041	C6	I114	B5	I263	G2	I378	G5	I619	C9		
F311	A1	I042	B6	I115	C4	I264	G2	I380	G3	I620	B9		
F312	G6	I042	C6	I115	C4	I264	G2	I380	G3	I620	B9		
F313	G8	I043	C6	I116	C4	I265	G1	I383	G3	I621	C9		
F314	G8	I043	C6	I116	C4	I265	G1	I383	G3	I621	C9		
F315	G8	I044	C6	I117	C4	I266	F2	I384	G3	I622	C9		
F316	G8	I044	C6	I117	C4	I266	F2	I384	G3	I622	C9		
F317	G8	I045	C6	I118	C4	I267	G2	I385	G3	I623	C9		
F318	G8	I045	C6	I118	C4	I267	G2	I385	G3	I623	C9		
F319	G8	I046	C6	I120	D5	I268	F1	I386	G3	I624	B9		
F320	G8	I046	C6	I120	D5	I268	F1	I386	G3	I624	B9		
F321	G8	I047	B6	I121	C5	I269	G2	I387	G3	I625	B9		
F322	G4	I047	B6	I121	C5	I269	G2	I387	G3	I625	B9		
F323	F3	I048	B7	I122	C2	I270	G2	I388	G3	I626	B9		
F343	G4	I048	B7	I122	C2	I270	G2	I388	G3	I626	B9		
F368	F1	I049	A5	I123	C5	I290	A3	I389	G2	I627	C9		
F400	G8	I049	A5	I123	C5	I290	A3	I389	G2	I627	C9		
F401	F9	I050	B6	I124	C5	I291	B2	I390	G4	I628	C9		
F402	G9	I050	B6	I124	C5	I291	B2	I390	G4	I628	C9		
F403	G9	I051	B6	I125	C4	I292	A3	I391	G4	I629	D9		
F404	G9	I051	B6	I125	C4	I292	A3	I391	G4	I629	D9		
F405	G9	I052	B7	I126	D4	I293	A3	I392	G4	I630	B9		
F406	G9	I052	B7	I126	D4	I293	A3	I392	G4	I630	B9		
F407	G9	I053	B6	I127	C5	I300	E2	I396	G4	I631	A8		
F408	G8	I053	B6	I127	C5	I300	E2	I396	G4	I631	A8		
F409	G8	I054	B6	I128	D5	I301	E4	I400	F9	I632	A8		
F410	F8	I054	B6	I128	D5	I301	E4	I400	F9	I632	A8		
F411	E6	I055	B6	I129	C5	I302	F4	I401	F9	I633	C9		
F412	E5	I055	B6	I129	C5	I302	F4	I401	F9	I633	C9		
F500	F7	I056	A7	I131	D5	I303	G4	I402	F9	I634	B8		
F501	F6	I056	A7	I131	D5	I303	G4	I402	F9	I634	B8		
F502	F5	I057	B6	I132	C4	I304	G2	I403	E9	I635	B8		
F503	E5	I057	B6	I132	D4	I304	G2	I403	E9	I635	B8		
F504	G5	I059	B6	I135	C5	I305	G4	I404	D9	I636	C9		
F505	G5	I059	B6	I135	C5	I305	G4	I404	E9	I636	C9		
F509	G5	I060	D5	I152	E4	I306	G3	I405	D8	I700	A2		
F510	G6	I060	D5	I152	E4	I306	G3	I405	D8	I700	A2		
F600	D6	I061	D5	I153	D4	I307	G3	I406	E6	I701	A2		
F601	E7	I061	D5	I153	D4	I307	G3	I406	E6	I701	A2		
F604	D6	I062	D5	I154	D4	I308	G4	I407	E5	I703	A1		
F605	D6	I062	D5	I154	D4	I308	G4	I407	E5	I703	A1		
F606	C9	I063	D5	I155	D4	I309	G3	I408	E7	I704	A1		
F608	B9	I063	D5	I155	D4	I309	G3	I408	E7	I704	A1		
F609	A9	I064	D6	I156	D4	I310	G4	I409	D9	I705	A2		
F610	B9	I064	D6	I156	D4	I310	G4	I409	D9	I705	A2		
F700	A1	I065	B3	I157	D5	I311	G4	I410	D9	I706	A3		
F701	A1	I065	B3	I157	D5	I311	G4	I410	D9	I706	A3		
F996	A3	I066	C6	I158	B1	I312	G3	I411	E6	I708	A3		
F997	A3	I066	C6	I158	B1	I312	G3	I411	E6	I708	A3		
F998	A3	I067	A4	I159	B1	I313	G3	I412	E5	I709	A3		
F999	A3	I067	A4	I159	B1	I313	G3	I412	E5	I709	A3		
I001	A7	I069	B3	I160	B1	I314	G3	I413	E5	I710	A2		
I001	A7	I069	B3	I160	B1	I314	G3	I413	E5	I710	A2		
I002	B6	I070	B3	I161	B2	I315	G3	I414	E5	I711	A1		
I002	B6	I070	B3	I161	B2	I315	G3	I414	E5	I711	A1		
I003	A6	I071	A4	I200	C2	I316	G3	I415	D5	I712	A2		
I003	A6	I071	A4	I200	C2	I316	G3	I415	E5	I712	A2		
I004	A6	I072	C3	I201	C1	I318	G3	I416	D5	I713	A3		
I004	A6	I072	C3	I201	C1	I318	G3	I416	D5	I713	A3		
I005	A7	I073	B4	I202	C2	I322	G2	I417	E6	I900	G7		
I005	A7	I073	B4	I202	C2	I322	G2	I417	E6	I901	G7		
I006	A7	I074	B2	I203	C2	I324	G3	I418	F8	I902	G7		
I006	A7	I074	B2	I203	C2	I324	G3	I418	F8	I903	G7		

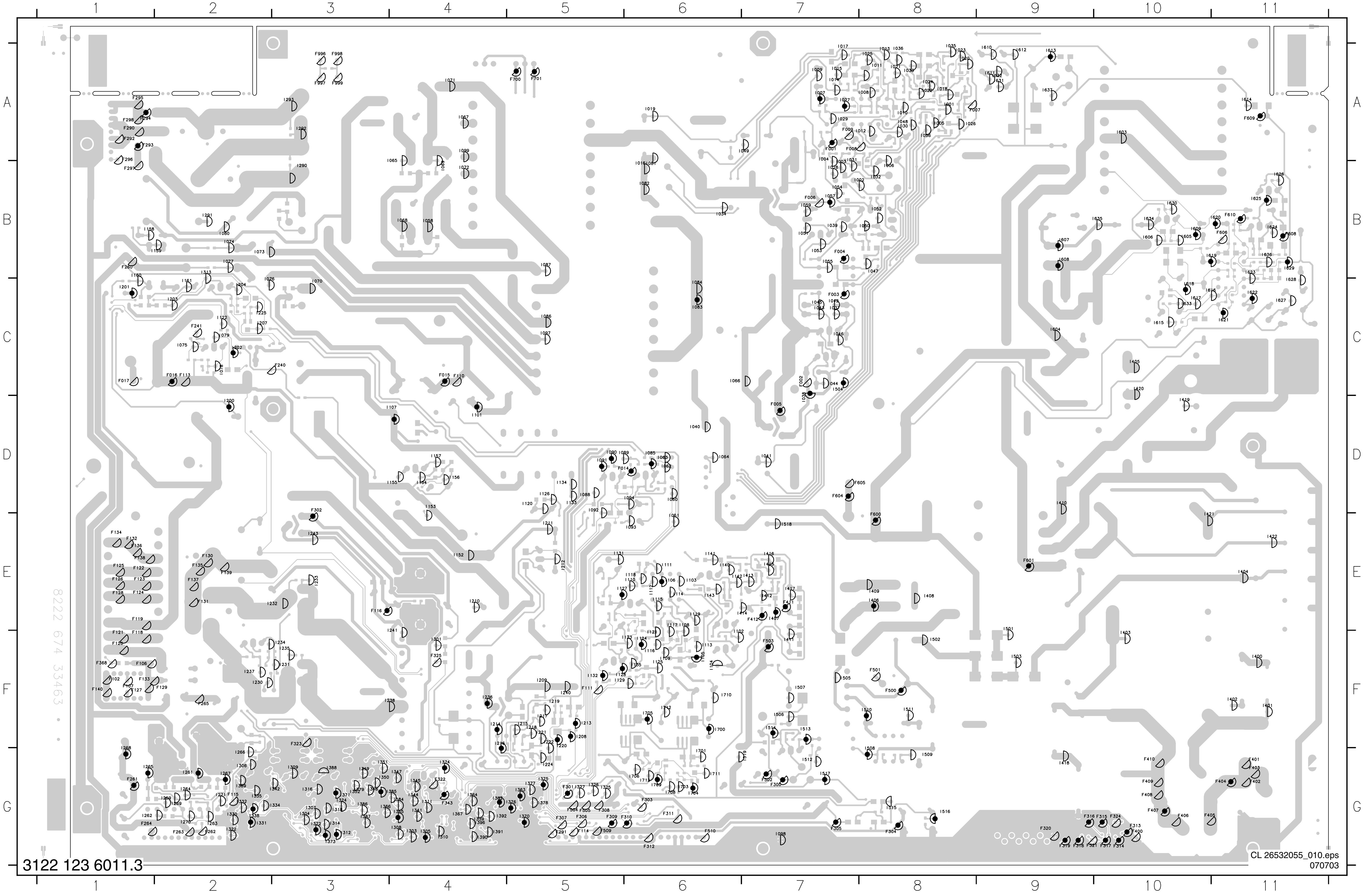
Block Diagram Power Supply (FM24 AB/FM33 AA)


P5 PRECONDITIONER
HOT
PRECONDITIONER
CONTROL
P6 LLC-SUPPLY
HOT COLD
- LLC-CONVERTER -
- BIAS-SUPPLY -
PROT
CONTROL
SOFT START + CURRENT PROTECTION
HIGH SIDE DRIVE
LOW SIDE DRIVE
VS-SUPPLY
- AUDIO SUPPLY -
CONTROL
CONTROL CIRCUIT
P4 FAN CONTROL
FAN1 (OPTIONAL)
FAN2 (OPTIONAL)
- +3V3 SUPPLY -
VS- SWITCHED -
SWITCH ON LOGIC VS
SWITCH LOGIC SEQUENCE DISCHARGE
MAINS FILTER UNIT
MAINS FILTER
P2 FILTERS-STBY
P7 AUX-SUPPLY
- VA-SUPPLY -
VCC & DRAIN CONTROL
IA CURRENT MEASUREMENT
FAST SWITCH OFF CIRCUIT FOR CONTROL IC AT SWITCH OFF
- VCC SUPPLY -
P2 STBY
P3 PROTECTIONS
- ERROR LOGGING -
T/O EXP.
DETECTION CIRCUIT
ACTIVATING
ACTIVATING DELAY
- STANDBY SUPPLY -
P3 PROTECTIONS
- TEMP PROTECTION -
- VS PROTECTION -
- VA PROTECTION -
- VCC PROTECTION -
- +3V3 PROTECTION -
-DC_PROT-
- VCEGO -
- LATCH -
- STANDBY -
- IAK BUFFER -
2.5Vref CIRCUIT -
VSA CONTROL LOGIC
COLD
HOT

CL 26532055_011.eps
030502

Testpoint Overview: Power Supply (FM24 AB)

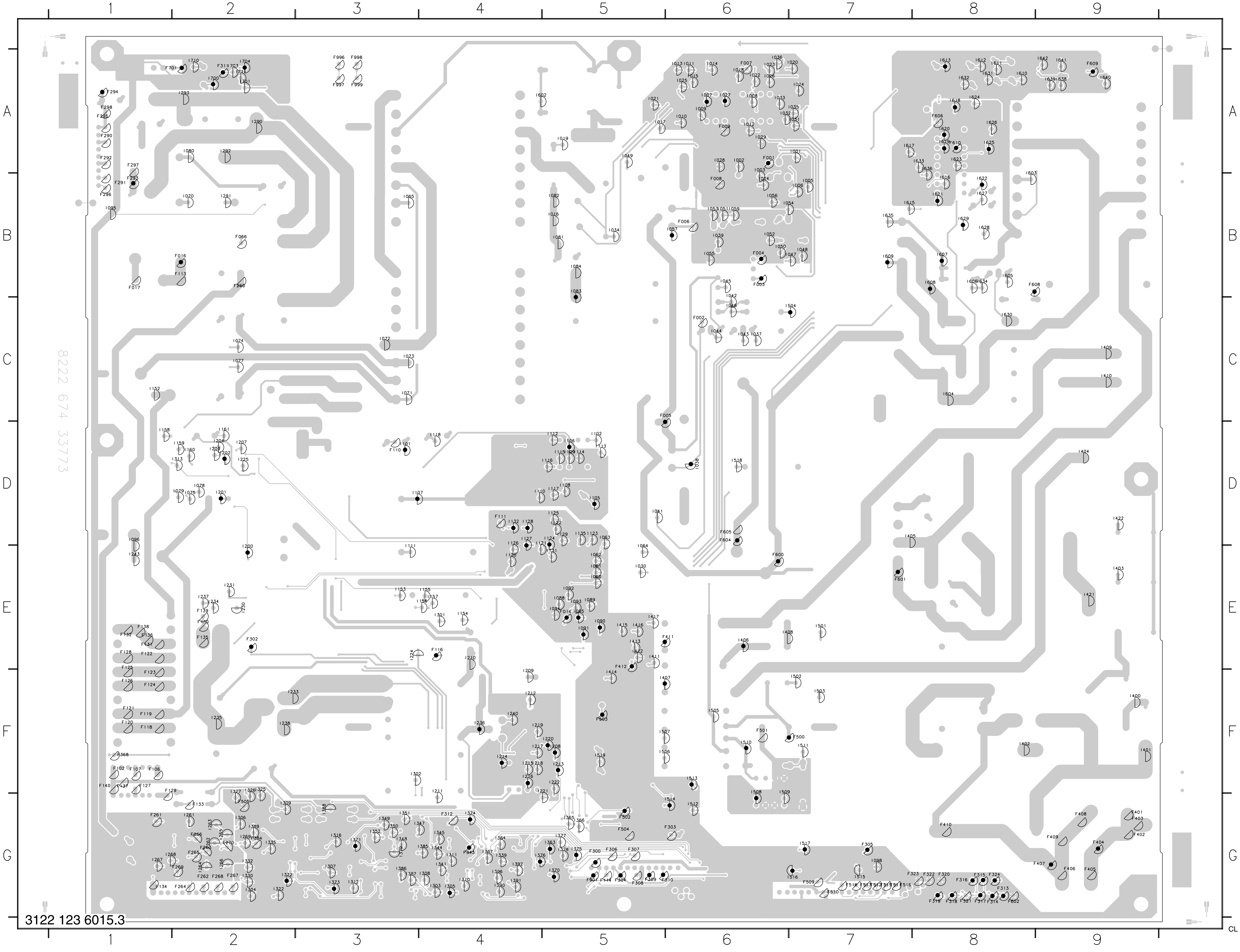
F001	A7
F002	C7
F003	C7
F004	B7
F005	D7
F006	B7
F007	A8
F008	A8
F009	A7
F014	D6
F015	C4
F016	C2
F017	C1
F102	F1
F106	F1
F107	F1
F110	C4
F111	F5
F113	C2
F114	G5
F115	G2
F116	E3
F118	F1
F119	E1
F120	F1
F121	F1
F122	E1
F123	E1
F124	E1
F125	E1
F126	E1
F127	F1
F128	E1
F129	F1
F130	E2
F131	E2
F132	E1
F133	F1
F134	E1
F135	E2
F136	E1
F137	E2
F138	E1
F139	E2
F140	F1
F240	C2
F241	C2
F260	B1
F261	G1
F262	G2
F263	G2
F264	G1
F265	F2
F290	A1
F291	G5
F292	A1
F293	A1
F294	A1
F295	A1
F296	A1
F297	B1
F298	A1
F300	G7
F301	G5
F302	E3
F303	G6
F304	G8
F305	G7
F306	G5
F307	G5
F308	G5
F309	G5
F310	G6
F311	G6
F312	G6
F313	G10
F314	G10
F315	G10
F316	G9
F317	G10
F318	G9
F319	G9
F320	G9
F321	G9
F322	G4
F323	F3
F324	G10
F325	F4
F343	G4
F368	F1
F400	G10
F401	G11
F402	G11
F403	G11
F404	G11
F405	G10
F406	G10
F407	G10
F408	G10
F409	G10
F410	G10
F411	E7
F412	E7
F500	F8
F501	F8
F502	G7
F503	F7
F504	G5
F505	G5
F509	G5
F510	G6
F600	E8
F601	E9
F604	D7
F605	D7
F606	B11
F608	B11
F609	A11
F610	B11
F700	A5
F701	A5
F996	A3
F997	A3
F998	A3
F999	A3
I001	A8
I002	B8
I003	B7
I004	B7
I005	A8
I006	A8
I007	A7
I008	A8
I009	A7
I010	A8
I011	A8
I012	A8
I013	A8
I014	A7
I015	A7
I016	B6
I017	A7
I018	A8
I019	A6
I020	A8
I021	A8
I022	A8
I023	A8
I024	A8
I025	A8
I026	A8
I027	A7
I028	B7
I029	A7
I030	A8
I031	B7
I032	B8
I033	A8
I034	B6
I035	A8
I036	A8
I037	C7
I038	C7
I039	B7
I040	D6
I041	D7
I042	C7
I043	C7
I044	C7
I045	C7
I046	C7
I047	B8
I048	A8
I049	A7
I050	B8
I051	B7
I052	B8
I053	B7
I054	B7
I055	B7
I056	A8
I057	B7
I058	B4
I059	B7
I060	D6
I061	E6
I062	D6
I063	D6
I064	D6
I065	A4
I066	C7
I067	A4
I068	B4
I069	A4
I070	C3
I071	A4
I072	B4
I073	B2
I074	B2
I075	C2
I076	C2
I077	B2
I078	C2
I079	C2
I080	B2
I081	A6
I082	B6
I083	C6
I084	C6
I085	D6
I086	C5
I087	B5
I088	D5
I089	D5
I090	D5
I091	D5
I092	D5
I093	E6
I094	D6
I097	C5
I098	G7
I099	A4
I101	D4
I102	F6
I103	E6
I104	F6
I105	F6
I106	E6
I107	D4
I108	F6
I109	F6
I110	E6
I111	E6
I112	E6
I113	F6
I114	E6
I115	E6
I116	F6
I117	F6
I118	E6
I119	E6
I120	D5
I121	F6
I122	C2
I123	F6
I124	F6
I125	F6
I126	D5
I127	E5
I128	F5
I129	F6
I131	E5
I132	F5
I133	D5
I134	D5
I135	F6
I140	E6
I141	E6
I142	E6
I143	E6
I152	E4
I153	E4
I154	D4
I155	D4
I156	D4
I157	D4
I158	B1
I159	B2
I160	C1
I161	C2
I200	D2
I201	C1
I202	C2
I203	C2
I204	C2
I207	C2
I208	F5
I209	F5
I210	E4
I211	E5
I212	E5
I213	F5
I214	F4
I215	F5
I216	G4
I217	F5
I218	F5
I219	F5
I220	F5
I221	F5
I222	G5
I224	G5
I225	C2
I230	F2
I231	F3
I232	E3
I233	E3
I234	F2
I235	F3
I236	F4
I237	F2
I238	F4
I240	F5
I241	F4
I243	E3
I259	G2
I261	G2
I262	G2
I263	G2
I264	G2
I265	G1
I266	G2
I267	G2
I268	G1
I269	G2
I270	G2
I271	G2
I290	B3
I291	B2
I292	A3
I293	A3
I301	F4
I303	G4
I304	G3
I305	G4
I306	G2
I307	G3
I308	G4
I309	G3
I310	G4
I311	G4
I312	G3
I313	C2
I314	G3
I316	G3
I318	G3
I322	G2
I324	G3
I325	G5
I326	G5
I327	G5
I330	G2
I331	G2
I332	G2
I334	G2
I335	G2
I338	G2
I339	G4
I341	G4
I342	G3
I344	G4
I345	G4
I347	G4
I348	G3
I349	G3
I350	G3
I351	G3
I352	G3
I362	G4
I363	G5
I364	G4
I365	G4
I366	G3
I367	G4
I370	G5
I371	G3
I372	G3
I373	G3
I374	G4
I375	G5
I376	G5
I377	G5
I378	G5
I379	G3
I384	G4
I385	G4
I386	G3
I387	G3
I388	G3
I389	G2
I390	G4
I391	G4
I392	G4
I396	G4
I400	F11
I401	F11
I402	F11
I403	F10
I404	E11
I405	C10
I406	E8
I407	E7
I408	E8
I409	E8
I410	D9
I411	F7
I412	E7
I413	E7
I414	E6
I415	E7
I416	E7
I417	E7
I418	G9
I419	D10
I420	C10
I421	E10
I422	E11
I501	F9
I502	F8
I503	F9
I504	C7
I505	F7
I506	F7
I507	F7
I508	G8
I509	G8
I510	F8
I511	F8
I512	G7
I513	F7
I514	F7
I515	G8
I516	G8
I517	G7
I518	E7
I519	G6
I603	A10
I604	C9
I605	B10
I606	B10
I607	B9
I608	B9
I609	B10
I610	A9
I611	A9
I612	A9
I613	A9
I614	A11
I615	C10
I616	C11
I617	C10
I618	C10
I619	B10
I620	B11
I621	C11
I622	C11
I623	C11
I624	B11
I625	B11
I626	B11
I627	C11
I628	C11
I629	B11
I630	B10
I631	A9
I632	A9
I633	C10
I634	B10
I635	B10
I636	B11
I637	A9
I700	F6
I701	G6
I703	G6
I704	G6
I705	F6
I706	G6
I708	G6
I709	G6
I710	F6
I711	G6
I712	F6
I713	G6



CL 26532055_010.eps
070703

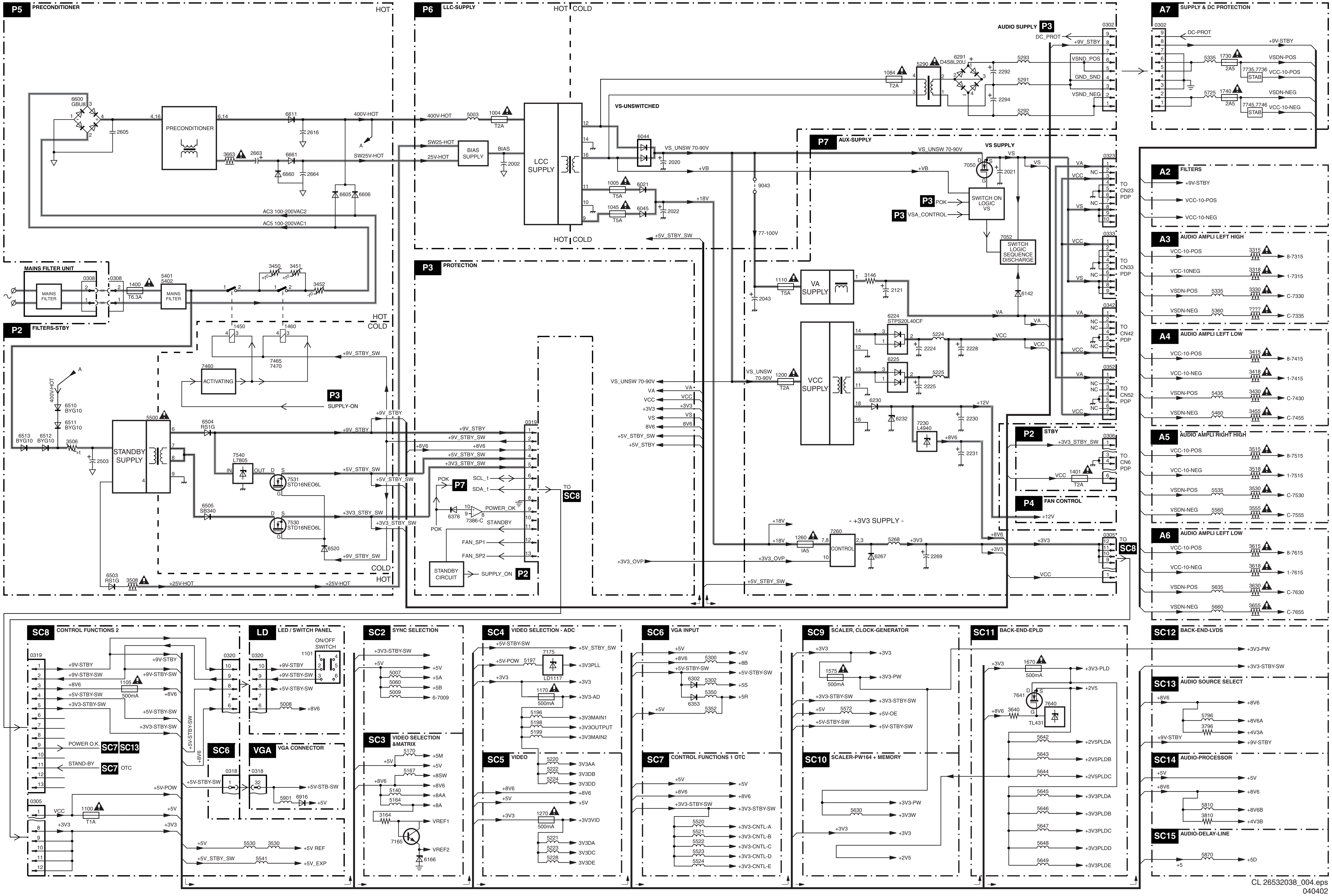
Testpoint Overview: Power Supply (FM33 AA)

F001	A6
F002	C6
F003	B6
F004	B6
F005	C5
F006	B6
F007	A6
F008	B6
F009	A6
F014	E5
F016	B2
F017	B1
F066	B2
F102	F1
F106	F1
F107	F1
F110	D3
F111	D4
F113	B2
F114	G5
F116	E4
F118	F1
F119	F1
F120	F1
F121	F1
F122	E1
F123	E1
F124	F1
F125	E1
F126	F1
F127	F1
F128	E1
F129	F1
F130	E2
F131	E1
F132	E1
F133	G2
F134	G1
F135	E2
F136	E1
F137	F1
F138	E1
F139	E2
F140	F1
F260	B2
F261	G1
F262	G2
F263	G2
F264	G2
F265	G2
F266	G2
F267	G2
F268	G2
F269	G2
F270	G2
F290	A1
F291	B1
F292	A1
F293	A1
F294	A1
F295	A1
F296	B1
F297	A1
F298	A1
F300	G5
F301	G5
F302	E2
F303	G6
F304	G5
F305	G7
F306	G5
F307	G5
F308	G5
F309	G5
F310	G6
F311	A2
F312	G4
F313	G8
F314	G8
F315	G8
F316	G8
F317	G8
F318	G8
F319	G8
F320	G8
F321	G8
F322	G8
F323	G7
F324	G8
F343	G4
F368	F1
F384	G2
F401	G9
F402	G9
F403	G9
F404	G9
F405	G9
F406	G9
F407	G9
F408	G9
F409	G9
F410	G8
F411	E6
F412	E5
F500	F7
F501	F6
F502	G5
F503	F5
F504	G5
F505	G2
F509	G7
F510	G7
F511	G7
F512	G7
F513	G7
F514	G7
F515	G7
F516	G7
F600	E6
F601	E7
F602	G8
F604	D6
F605	D6
F606	A8
F608	B8
F609	A9
F610	A8
F701	A2
F996	A3
F997	A3
F998	A3
F999	A3
I001	A7
I002	A6
I003	A6
I004	B6
I005	B7
I006	B7
I007	A6
I008	A6
I009	A6
I010	A6
I011	A6
I012	A6
I013	A6
I014	A6
I015	A6
I016	B5
I017	A5
I018	A6
I019	A5
I020	A7
I021	A5
I022	A6
I023	A6
I024	A7
I025	A6
I026	A6
I027	A6
I028	A6
I029	A6
I030	E5
I031	A7
I032	A6
I033	A6
I034	B5
I035	A7
I036	A6
I037	C6
I038	D6
I039	B6
I041	D5
I042	B6
I043	C6
I044	C6
I045	B6
I046	C6
I047	B6
I048	B7
I049	A5
I050	B6
I051	B6
I052	B6
I053	B6
I054	B6
I055	B6
I056	B6
I057	B6
I059	B6
I060	E5
I061	E5
I062	E5
I063	D5
I064	D5
I065	B3
I070	B2
I071	C3
I072	C3
I073	C3
I074	C2
I075	D2
I077	C2
I078	D2
I079	D2
I080	A2
I081	B5
I082	B5
I083	B5
I084	B5
I085	E5
I088	E5
I089	E5
I090	E5
I091	E5
I092	E5
I093	E5
I094	E5
I095	B1
I096	D1
I098	G7
I101	D3
I102	D5
I105	D5
I106	D5
I107	D3
I108	D5
I109	D5
I110	D4
I111	D3
I112	D5
I113	D5
I114	D5
I115	D5
I116	D5
I117	D5
I118	D4
I120	E4
I121	D4
I122	D5
I123	D5
I124	D5
I125	D5
I126	D4
I127	D4
I128	D4
I129	D5
I131	E5
I132	D4
I135	D5
I152	C1
I153	E3
I154	E4
I155	E4
I156	E4
I157	E4
I158	D1
I159	D2
I160	D2
I161	D2
I200	D2
I201	D2
I202	D2
I203	D2
I204	D2
I207	D2
I208	F5
I209	E4
I210	E4
I211	F4
I212	F4
I213	F5
I214	F4
I215	F4
I216	F4
I217	F4
I218	F4
I219	F4
I220	F5
I221	F4
I222	F5
I224	E3
I225	D2
I230	E2
I231	E2
I233	F2
I234	E2
I235	F2
I236	F4
I237	E2
I238	F2
I240	F4
I243	E1
I261	G2
I262	G2
I263	G2
I264	G2
I265	G2
I266	G2
I267	G1
I268	G1
I269	G2
I290	A2
I291	B2
I292	A2
I293	A2
I301	E4
I302	F3
I303	G4
I304	G2
I305	G4
I306	G2
I307	G3
I308	G4
I309	G2
I310	G4
I311	G4
I312	G3
I313	D2
I316	G3
I322	G2
I325	F2
I326	F2
I327	F2
I330	G2
I332	G2
I335	G2
I339	G4
I341	G4
I344	G4
I345	G4
I347	G4
I348	G3
I349	G3
I350	G3
I351	G3
I352	G3
I363	G5
I364	G4
I365	G5
I366	G5
I367	G4
I370	G5
I371	G3
I372	G2
I373	G3
I374	G4
I375	G5
I376	G4
I377	G5
I378	G5
I379	G3
I385	G4
I386	G3
I387	G3
I388	G3
I389	G2
I390	G4
I391	G4
I392	G4
I396	G4
I400	F9
I401	F9
I402	F8
I403	E9
I404	D9
I405	D7
I406	E6
I407	F5
I408	E6
I409	C9
I410	C9
I411	E5
I412	E5
I413	E5
I414	E5
I415	E5
I416	E5
I417	E5
I421	E9
I422	D9
I501	E7
I502	F7
I503	F7
I504	C6
I505	F6
I506	F5
I507	F5
I508	F6
I509	F6
I510	F6
I511	F7
I512	G6
I513	F6
I514	G6
I515	G7
I516	G7
I517	G7
I518	D6
I519	F5
I602	A4
I603	A8
I604	C8
I605	B8
I606	B8
I607	B8
I608	B8
I609	B7
I610	A8
I611	A8
I612	A8
I613	A8
I615	B7
I616	A8
I617	A7
I618	A8
I619	A8
I620	A8
I621	B8
I622	B8
I623	A8
I624	A8
I625	A8
I626	A8
I627	B8
I628	B8
I629	B8
I630	C8
I631	A8
I632	A8
I633	A8
I634	B8
I635	B7
I636	A8
I638	A9
I639	A9
I640	A9
I641	A9
I642	A9
I700	A2
I701	A2
I703	A2
I704	A2
I710	A2
I711	A2



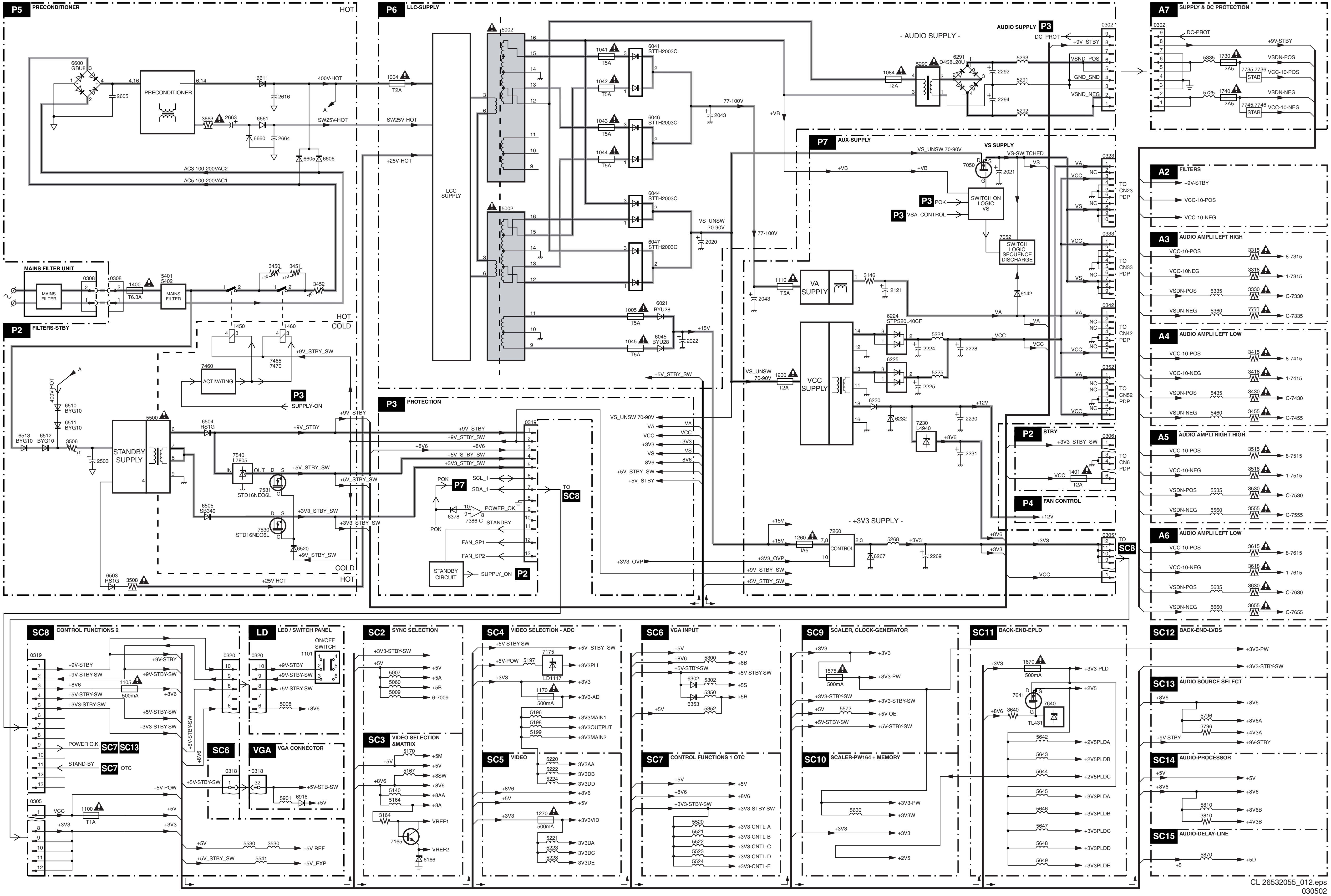
CL 36532051_013.eps
070703

Power Lines Overview (FM23 AC)


P5 PRECONDITIONER
HOT
6600 GBU8J
2605
PRECONDITIONER
6611
2616
400V-HOT
3663
2663
6661
SW25V-HOT
6660
2664
6605
6606
AC3 100-200VAC2
AC5 100-200VAC1
P6 LLC-SUPPLY
HOT COLD
400V-HOT
5003
1004
T2A
SW25-HOT
25V-HOT
BIAS SUPPLY
BIAS
2002
LCC SUPPLY
VS-UNSWITCHED
6044
VS_UNSW 70-90V
2020
+VB
1005
T5A
6021
+18V
1045
T5A
6045
2022
+5V_STBY_SW
AUDIO SUPPLY P3
DC_PROT
+9V_STBY
1084
T2A
5290
6291 D4S8L20U
2292
2294
5293
5291
5292
VSND_POS
GND_SND
VSND_NEG
0302
A7 SUPPLY & DC PROTECTION
DC-PROT
+9V-STBY
5335
1730
2A5
VSDN-POS
7735,7736 STAB
VCC-10-POS
5725
1740
VSDN-NEG
7745,7746 STAB
VCC-10-NEG
P7 AUX-SUPPLY
VS SUPPLY
7050
2021
9043
P3 POK
SWITCH ON LOGIC VS
P3 VSA_CONTROL
7052 SWITCH LOGIC SEQUENCE DISCHARGE
77-100V
6142
1110
T5A
VA SUPPLY
3146
2121
2043
6224 STPS20L40CF
5224
2224
2228
6225
5225
2225
VS_UNSW 70-90V
1200
T2A
VCC SUPPLY
6230
+12V
6232
2230
7230 L4940
+8V6
2231
0323
TO CN23 PDP
0333
TO CN33 PDP
0342
TO CN42 PDP
0352
TO CN52 PDP
A2 FILTERS
+9V-STBY
VCC-10-POS
VCC-10-NEG
A3 AUDIO AMPLI LEFT HIGH
A4 AUDIO AMPLI LEFT LOW
A5 AUDIO AMPLI RIGHT HIGH
A6 AUDIO AMPLI LEFT LOW
8-7315
1-7315
C-7330
C-7335
P2 STBY
+3V3_STBY_SW
0306
TO CN6 PDP
1401
T2A
P4 FAN CONTROL
+12V
- +3V3 SUPPLY -
+18V
1260
IA5
7260 CONTROL
5268
+3V3
6267
2269
+3V3_OVP
0305
TO SC8
MAINS FILTER UNIT
MAINS FILTER
0308
1400
T6.3A
5401
5402
3450
3451
3452
P2 FILTERS-STBY
HOT
COLD
1450
1460
7460 ACTIVATING
7465
7470
P3 SUPPLY-ON
+9V_STBY_SW
400V-HOT
6510 BYG10
6511 BYG10
6513 BYG10
6512 BYG10
3506
2503
STANDBY SUPPLY
5500
6504 RS1G
7540 L7805
7531 STD16NEO6L
6505 SB340
7530 STD16NEO6L
6520
6503 RS1G
3508
+25V-HOT
P3 PROTECTION
0319
+9V_STBY
+9V_STBY_SW
+8V6
+5V_STBY_SW
+3V3_STBY_SW
POK
P7
SCL_1
SDA_1
POWER_OK
6378
7386-C
STANDBY
FAN_SP1
FAN_SP2
STANDBY CIRCUIT
SUPPLY_ON P2
TO SC8
VS_UNSW 70-90V
VA
VCC
+3V3
VS
8V6
+5V_STBY_SW
+5V_STBY
+3V3_OVP
SC8 CONTROL FUNCTIONS 2
POWER O.K.
SC7 SC13
STAND-BY
SC7 OTC
1105
500mA
1100
T1A
+5V-POW
+5V REF
+5V_EXP
LD LED / SWITCH PANEL
ON/OFF SWITCH
1101
SC6
VGA VGA CONNECTOR
0318
5901
6916
SC2 SYNC SELECTION
SC3 VIDEO SELECTION &MATRIX
VREF1
VREF2
7165
6166
SC4 VIDEO SELECTION - ADC
LD1117
1170
500mA
+3V3PLL
+3V3-AD
+3V3MAIN1
+3V3OUTPUT
+3V3MAIN2
SC5 VIDEO
3V3AA
3V3DB
3V3DD
1270
500mA
+3V3VID
3V3DA
3V3DC
3V3DE
SC6 VGA INPUT
SC7 CONTROL FUNCTIONS 1 OTC
+3V3-CNTL-A
+3V3-CNTL-B
+3V3-CNTL-C
+3V3-CNTL-D
+3V3-CNTL-E
SC9 SCALER, CLOCK-GENERATOR
1575
500mA
+3V3-PW
+5V-OE
SC10 SCALER-PW164 + MEMORY
+3V3W
+2V5
SC11 BACK-END-EPLD
1670
500mA
+3V3-PLD
7641
7640
TL431
+2V5PLDA
+2V5PLDB
+2V5PLDC
+3V3PLDA
+3V3PLDB
+3V3PLDC
+3V3PLDD
+3V3PLDE
SC12 BACK-END-LVDS
+3V3-PW
+3V3-STBY-SW
SC13 AUDIO SOURCE SELECT
+8V6A
+4V3A
+9V-STBY
SC14 AUDIO-PROCESSOR
+8V6B
+4V3B
SC15 AUDIO-DELAY-LINE
+5D

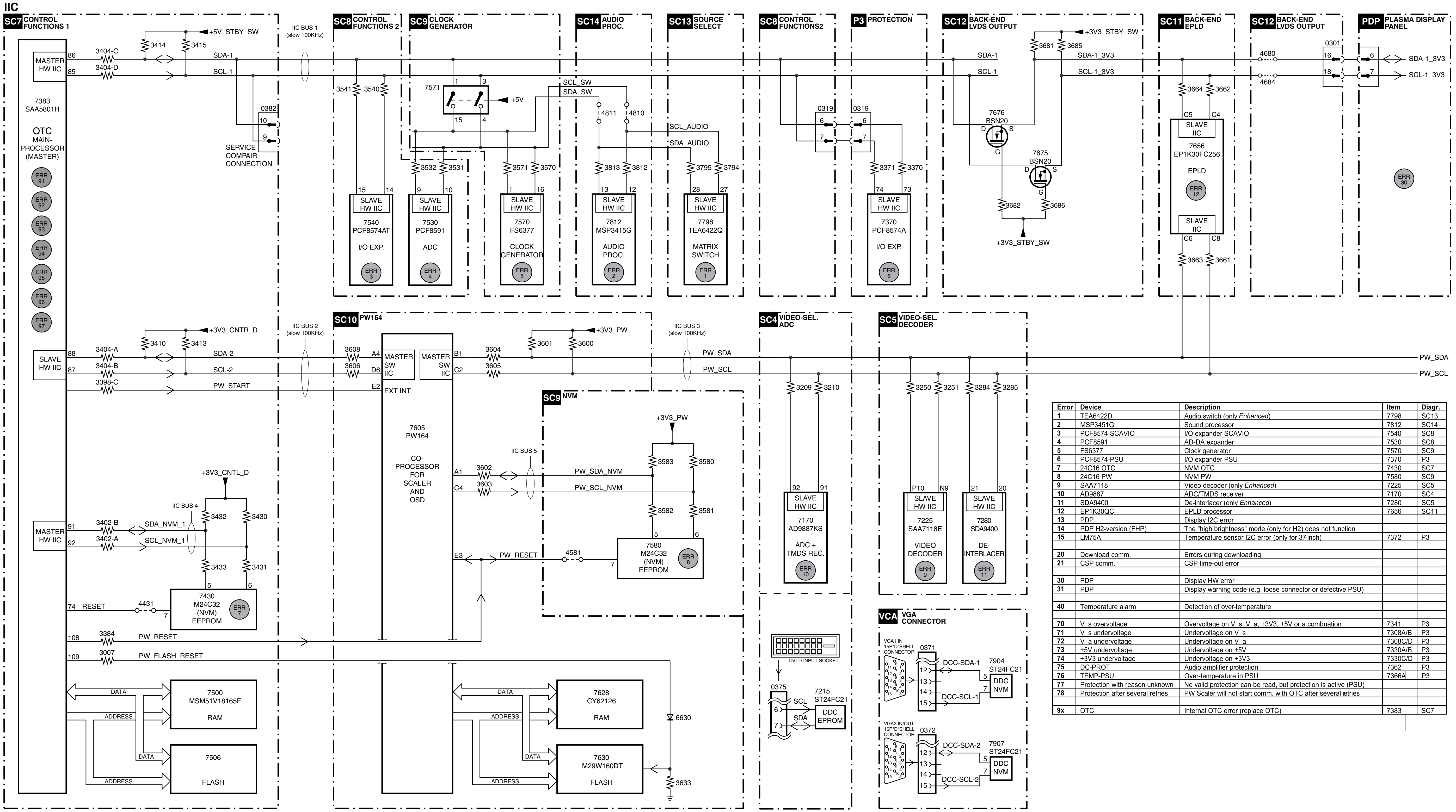
CL 26532038_004.eps
040402

Power Lines Overview (FM24 AB/FM33 AA)


P5 PRECONDITIONER
HOT
MAINS FILTER UNIT
P2 FILTERS-STBY
P6 LLC-SUPPLY
LCC SUPPLY
- AUDIO SUPPLY -
AUDIO SUPPLY P3
P7 AUX-SUPPLY
VS SUPPLY
VA SUPPLY
VCC SUPPLY
P3 PROTECTION
STANDBY SUPPLY
STANDBY CIRCUIT
- +3V3 SUPPLY -
A7 SUPPLY & DC PROTECTION
A2 FILTERS
A3 AUDIO AMPLI LEFT HIGH
A4 AUDIO AMPLI LEFT LOW
A5 AUDIO AMPLI RIGHT HIGH
A6 AUDIO AMPLI LEFT LOW
P2 STBY
P4 FAN CONTROL
SC8 CONTROL FUNCTIONS 2
LD LED / SWITCH PANEL
SC2 SYNC SELECTION
SC4 VIDEO SELECTION - ADC
SC6 VGA INPUT
SC9 SCALER, CLOCK-GENERATOR
SC11 BACK-END-EPLD
SC12 BACK-END-LVDS
SC13 AUDIO SOURCE SELECT
SC14 AUDIO-PROCESSOR
SC15 AUDIO-DELAY-LINE
SC3 VIDEO SELECTION &MATRIX
SC5 VIDEO
SC7 CONTROL FUNCTIONS 1 OTC
SC10 SCALER-PW164 + MEMORY
VGA VGA CONNECTOR
SC6

CL 26532055_012.eps
030502

I2C-IC Overview (FM23 AC/FM24 AB/FM33 AA)

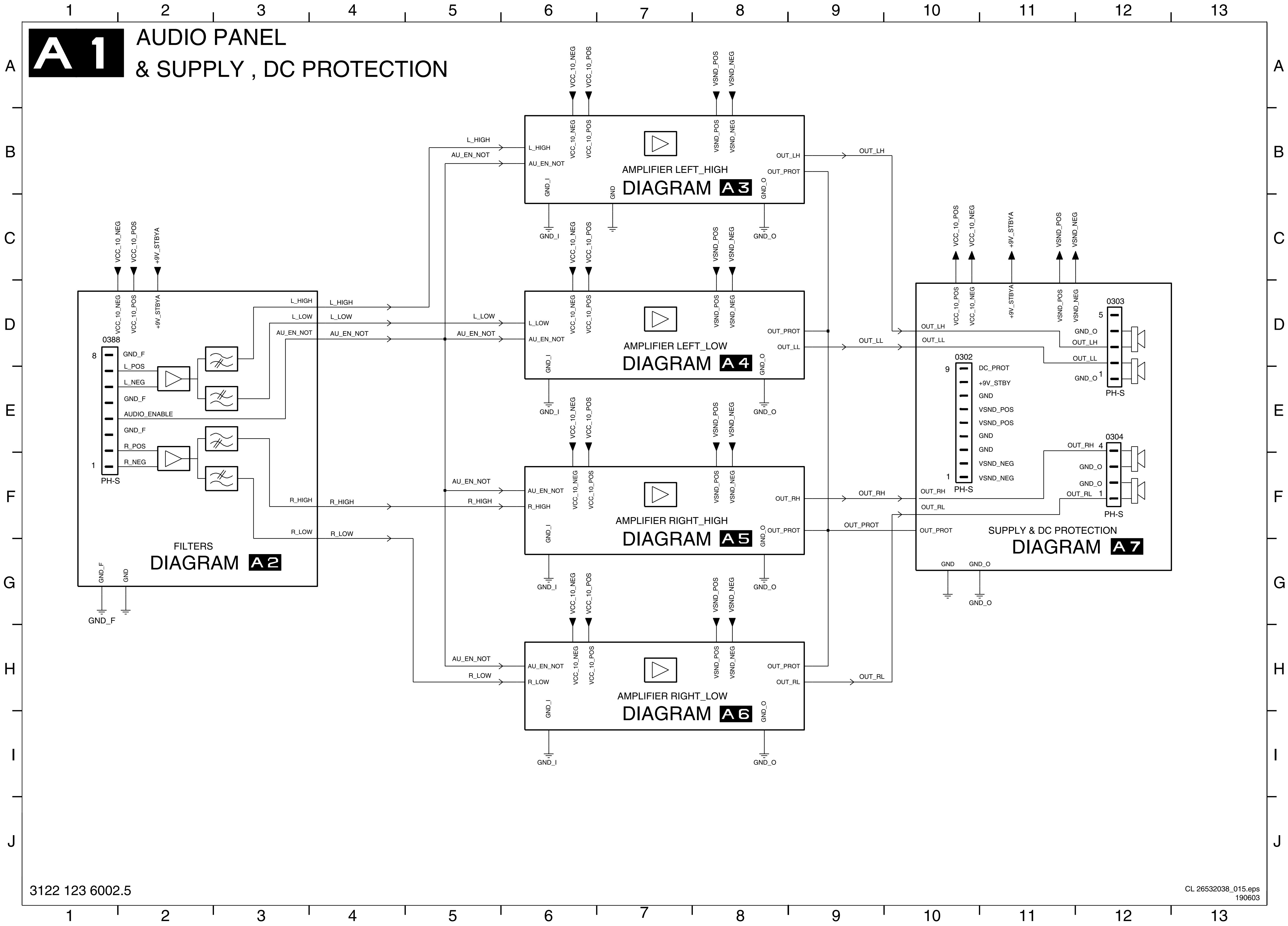

IIC
SC7 CONTROL FUNCTIONS 1
MASTER HW IIC
7383 SAA5801H
OTC MAIN-PROCESSOR (MASTER)
ERR 91
ERR 92
ERR 93
ERR 94
ERR 95
ERR 96
ERR 97
SLAVE HW IIC
MASTER HW IIC
+5V_STBY_SW
3414
3415
3404-C
3404-D
SDA-1
SCL-1
IIC BUS 1 (slow 100KHz)
0382
SERVICE COMPAIR CONNECTION
+3V3_CNTR_D
3410
3413
3404-A
3404-B
3398-C
SDA-2
SCL-2
PW_START
IIC BUS 2 (slow 100KHz)
+3V3_CNTL_D
IIC BUS 4
3402-B
3402-A
SDA_NVM_1
SCL_NVM_1
3432
3430
3433
3431
7430 M24C32 (NVM) EEPROM
ERR 7
74 RESET
4431
3384
PW_RESET
3007
PW_FLASH_RESET
DATA
ADDRESS
7500 MSM51V18165F RAM
7506 FLASH
SC8 CONTROL FUNCTIONS 2
3541
3540
SLAVE HW IIC 7540 PCF8574AT I/O EXP.
ERR 3
SC9 CLOCK GENERATOR
7571
+5V
SCL_SW
SDA_SW
3532
3531
SLAVE HW IIC 7530 PCF8591 ADC
ERR 4
3571
3570
SLAVE HW IIC 7570 FS6377 CLOCK GENERATOR
ERR 5
SC14 AUDIO PROC.
4811
4810
3813
3812
SLAVE HW IIC 7812 MSP3415G AUDIO PROC.
ERR 2
SC13 SOURCE SELECT
SCL_AUDIO
SDA_AUDIO
3795
3794
SLAVE HW IIC 7798 TEA6422Q MATRIX SWITCH
ERR 1
SC8 CONTROL FUNCTIONS2
0319
P3 PROTECTION
3371
3370
SLAVE HW IIC 7370 PCF8574A I/O EXP.
ERR 6
SC12 BACK-END LVDS OUTPUT
+3V3_STBY_SW
3681
3685
SDA-1_3V3
SCL-1_3V3
7676 BSN20
7675 BSN20
3682
3686
+3V3_STBY_SW
SC11 BACK-END EPLD
3664
3662
SLAVE IIC
7656 EP1K30FC256 EPLD
ERR 12
SLAVE IIC
3663
3661
SC12 BACK-END LVDS OUTPUT
4680
4684
0301
PDP PLASMA DISPLAY PANEL
ERR 30
SDA-1_3V3
SCL-1_3V3
SC10 PW164
3608
3606
MASTER SW IIC
MASTER SW IIC
EXT INT
7605 PW164 CO-PROCESSOR FOR SCALER AND OSD
3604
3605
+3V3_PW
3601
3600
IIC BUS 3 (slow 100KHz)
PW_SDA
PW_SCL
IIC BUS 5
3602
3603
PW_SDA_NVM
PW_SCL_NVM
PW_RESET
4581
SC9 NVM
+3V3_PW
3583
3580
3582
3581
7580 M24C32 (NVM) EEPROM
ERR 8
7628 CY62126 RAM
7630 M29W160DT FLASH
6630
3633
SC4 VIDEO-SEL. ADC
3209
3210
SLAVE HW IIC 7170 AD9887KS ADC + TMDS REC.
ERR 10
DVI-D INPUT SOCKET
0375
SCL
SDA
7215 ST24FC21 DDC EPROM
SC5 VIDEO-SEL. DECODER
3250
3251
3284
3285
SLAVE HW IIC 7225 SAA7118E VIDEO DECODER
ERR 9
SLAVE HW IIC 7280 SDA9400 DE-INTERLACER
ERR 11
PW_SDA
PW_SCL
VCA VGA CONNECTOR
VGA1 IN 15P"D"SHELL CONNECTOR
0371
DCC-SDA-1
DCC-SCL-1
7904 ST24FC21 DDC NVM
VGA2 IN/OUT 15P"D"SHELL CONNECTOR
0372
DCC-SDA-2
DCC-SCL-2
7907 ST24FC21 DDC NVM

Error	Device	Description	Item	Diagr.
1	TEA6422D	Audio switch (only *Enhanced*)	7798	SC13
2	MSP3451G	Sound processor	7812	SC14
3	PCF8574-SCAVIO	I/O expander SCAVIO	7540	SC8
4	PCF8591	AD-DA expander	7530	SC8
5	FS6377	Clock generator	7570	SC9
6	PCF8574-PSU	I/O expander PSU	7370	P3
7	24C16 OTC	NVM OTC	7430	SC7
8	24C16 PW	NVM PW	7580	SC9
9	SAA7118	Video decoder (only *Enhanced*)	7225	SC5
10	AD9887	ADC/TMDS receiver	7170	SC4
11	SDA9400	De-interlacer (only *Enhanced*)	7280	SC5
12	EP1K30QC	EPLD processor	7656	SC11
13	PDP	Display I2C error		
14	PDP H2-version (FHP)	The "high brightness" mode (only for H2) does not function		
15	LM75A	Temperature sensor I2C error (only for 37-inch)	7372	P3
20	Download comm.	Errors during downloading		
21	CSP comm.	CSP time-out error		
30	PDP	Display HW error		
31	PDP	Display warning code (e.g. loose connector or defective PSU)		
40	Temperature alarm	Detection of over-temperature		
70	V s overvoltage	Overvoltage on V s, V a, +3V3, +5V or a combination	7341	P3
71	V s undervoltage	Undervoltage on V s	7308A/B	P3
72	V a undervoltage	Undervoltage on V a	7308C/D	P3
73	+5V undervoltage	Undervoltage on +5V	7330A/B	P3
74	+3V3 undervoltage	Undervoltage on +3V3	7330C/D	P3
75	DC-PROT	Audio amplifier protection	7362	P3
76	TEMP-PSU	Over-temperature in PSU	7366A	P3
77	Protection with reason unknown	No valid protection can be read, but protection is active (PSU)		
78	Protection after several retries	PW Scaler will not start comm. with OTC after several retries		
9x	OTC	Internal OTC error (replace OTC)	7383	SC7

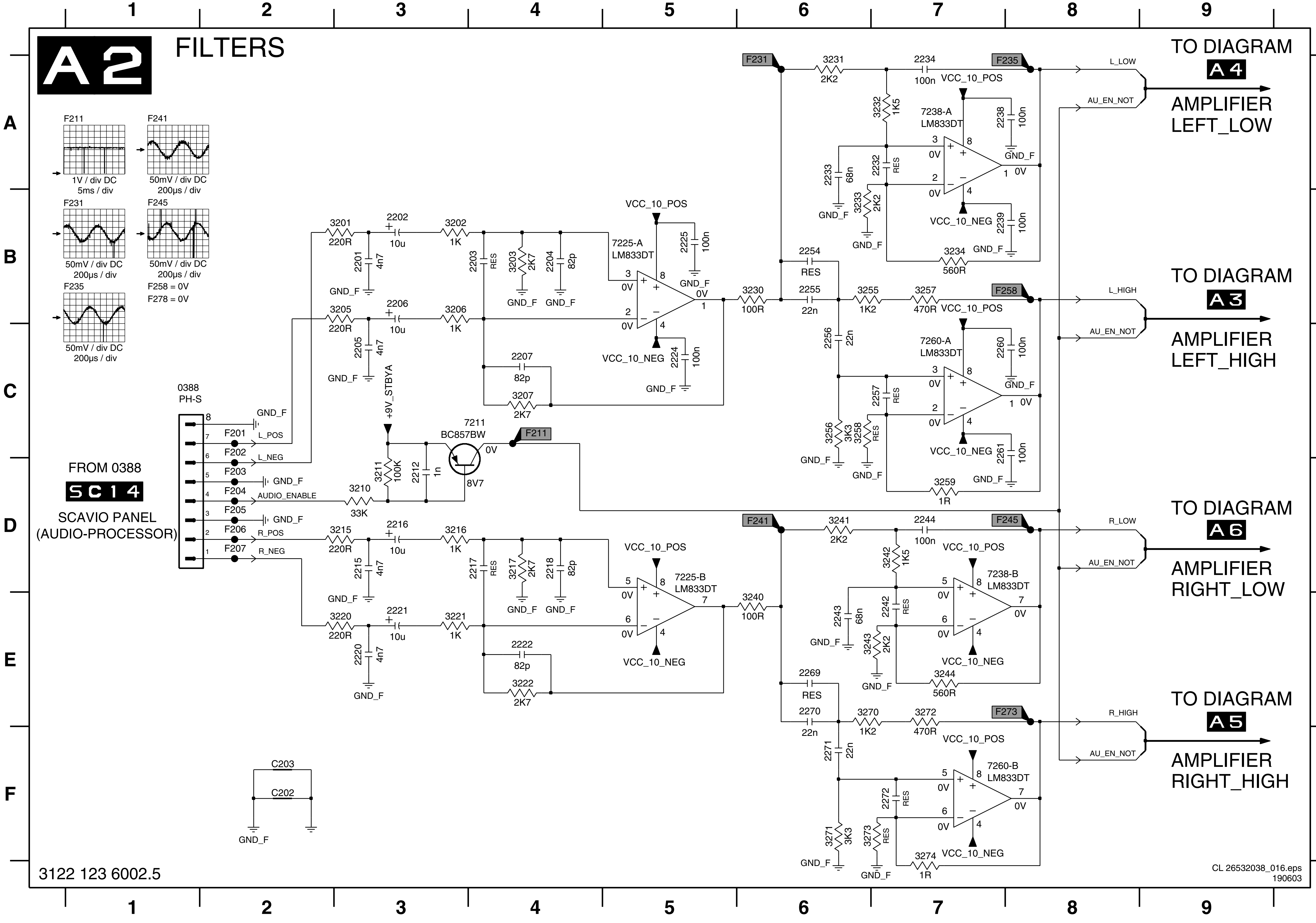
CL 36532051_034.eps
040703

7. Circuit Diagrams and PWB Layouts

Audio Panel & Supply: DC Protection


A 1
AUDIO PANEL
& SUPPLY , DC PROTECTION
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I J
VCC_10_NEG
VCC_10_POS
VSND_POS
VSND_NEG
+9V_STBYA
L_HIGH
AU_EN_NOT
OUT_LH
OUT_PROT
AMPLIFIER LEFT_HIGH
DIAGRAM A 3
GND_I
GND
GND_O
L_LOW
OUT_LL
AMPLIFIER LEFT_LOW
DIAGRAM A 4
R_HIGH
OUT_RH
AMPLIFIER RIGHT_HIGH
DIAGRAM A 5
R_LOW
OUT_RL
AMPLIFIER RIGHT_LOW
DIAGRAM A 6
0388
8
GND_F
L_POS
L_NEG
AUDIO_ENABLE
R_POS
R_NEG
1
PH-S
FILTERS
DIAGRAM A 2
GND_F
GND
0303
5
GND_O
OUT_LH
OUT_LL
1
0302
9
DC_PROT
+9V_STBY
GND
VSND_POS
VSND_NEG
0304
OUT_RH
4
OUT_RL
SUPPLY & DC PROTECTION
DIAGRAM A 7
GND
GND_O
3122 123 6002.5
CL 26532038_015.eps
190603

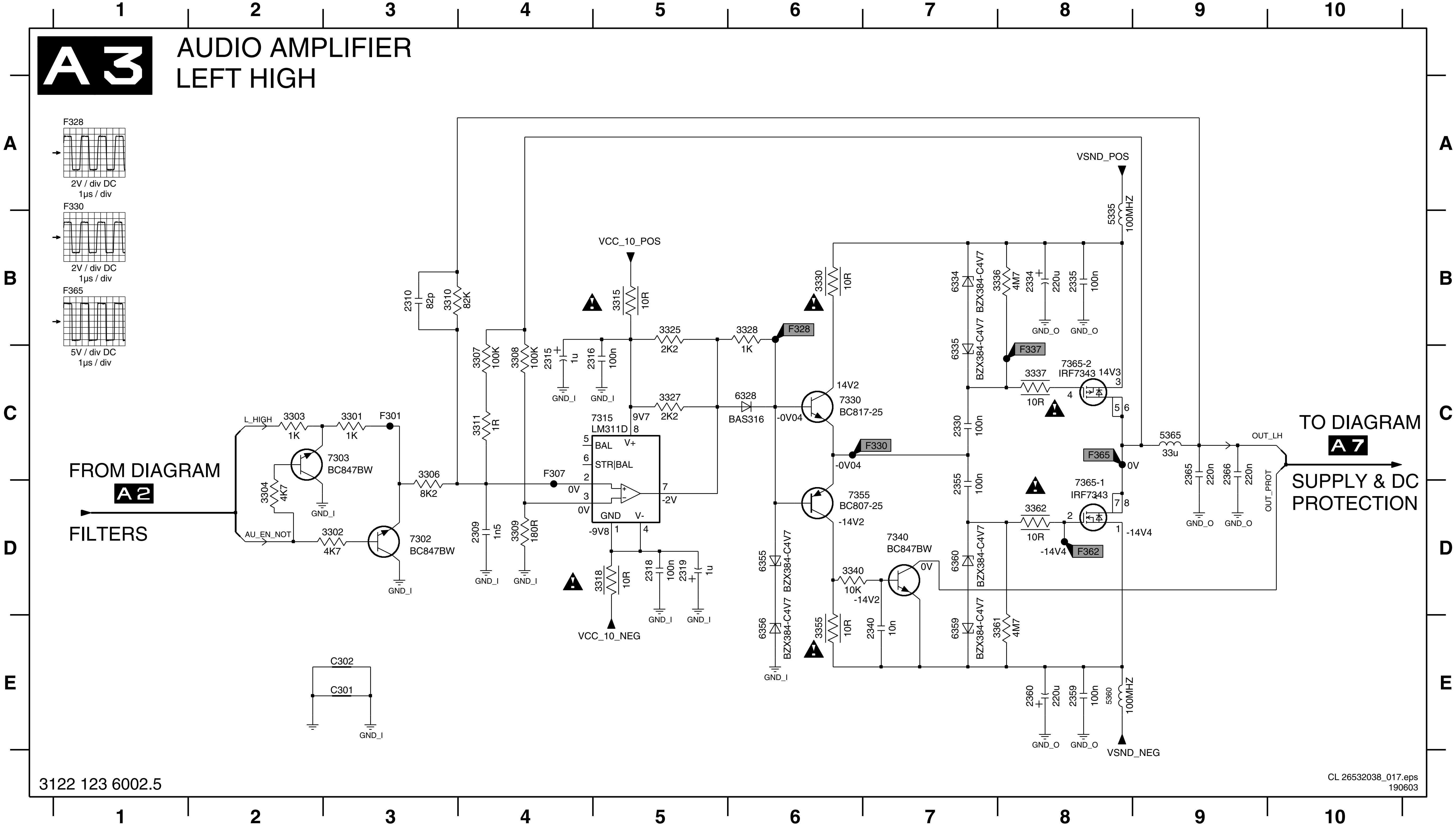
Audio Panel & Supply: Filters


A2
FILTERS
F211
1V / div DC
5ms / div
F241
50mV / div DC
200µs / div
F231
50mV / div DC
200µs / div
F245
50mV / div DC
200µs / div
F235
50mV / div DC
200µs / div
F258 = 0V
F278 = 0V
0388
PH-S
FROM 0388
SC14
SCAVIO PANEL
(AUDIO-PROCESSOR)
L_POS
L_NEG
AUDIO_ENABLE
R_POS
R_NEG
GND_F
+9V_STBYA
7211
BC857BW
8V7
7225-A
LM833DT
7225-B
LM833DT
7238-A
LM833DT
7238-B
LM833DT
7260-A
LM833DT
7260-B
LM833DT
VCC_10_POS
VCC_10_NEG
RES
L_LOW
L_HIGH
R_LOW
R_HIGH
AU_EN_NOT
TO DIAGRAM
A4
AMPLIFIER
LEFT_LOW
TO DIAGRAM
A3
AMPLIFIER
LEFT_HIGH
TO DIAGRAM
A6
AMPLIFIER
RIGHT_LOW
TO DIAGRAM
A5
AMPLIFIER
RIGHT_HIGH
C203
C202
3122 123 6002.5
CL 26532038_016.eps
190603

0388	C1
2201	B3
2202	B3
2203	B4
2204	B4
2205	C3
2206	B3
2207	C4
2212	D3
2215	D3
2216	D3
2217	D4
2218	D4
2220	E3
2221	E3
2222	E4
2224	C5
2225	B5
2232	A7
2233	A6
2234	A7
2238	A7
2239	B7
2242	E7
2243	E6
2244	D7
2254	B6
2255	B6
2256	C6
2257	C7
2260	C7
2261	C7
2269	E6
2270	E6
2271	F6
2272	F7
3201	B3
3202	B3
3203	B4
3205	B3
3206	B3
3207	C4
3210	D3
3211	D3
3215	D3
3216	D3
3217	D4
3220	E3
3221	E3
3222	E4
3230	B6
3231	A6
3232	A7
3233	B6
3234	B7
3240	E6
3241	D6
3242	D7
3243	E6
3244	E7
3255	B6
3256	C6
3257	B7
3258	C6
3259	D7
3270	E6
3271	F6
3272	E7
3273	F6
3274	F7
7211	C4
7225-A	B5
7225-B	D5
7238-A	A7
7238-B	D7
7260-A	C7
7260-B	F7
C202	F2
C203	F2
F201	C2
F202	C2
F203	D2
F204	D2
F205	D2
F206	D2
F207	D2
F211	C4
F231	A6
F235	A8
F241	D6
F245	D8
F258	B8
F273	E8

Audio Panel & Supply: Left High

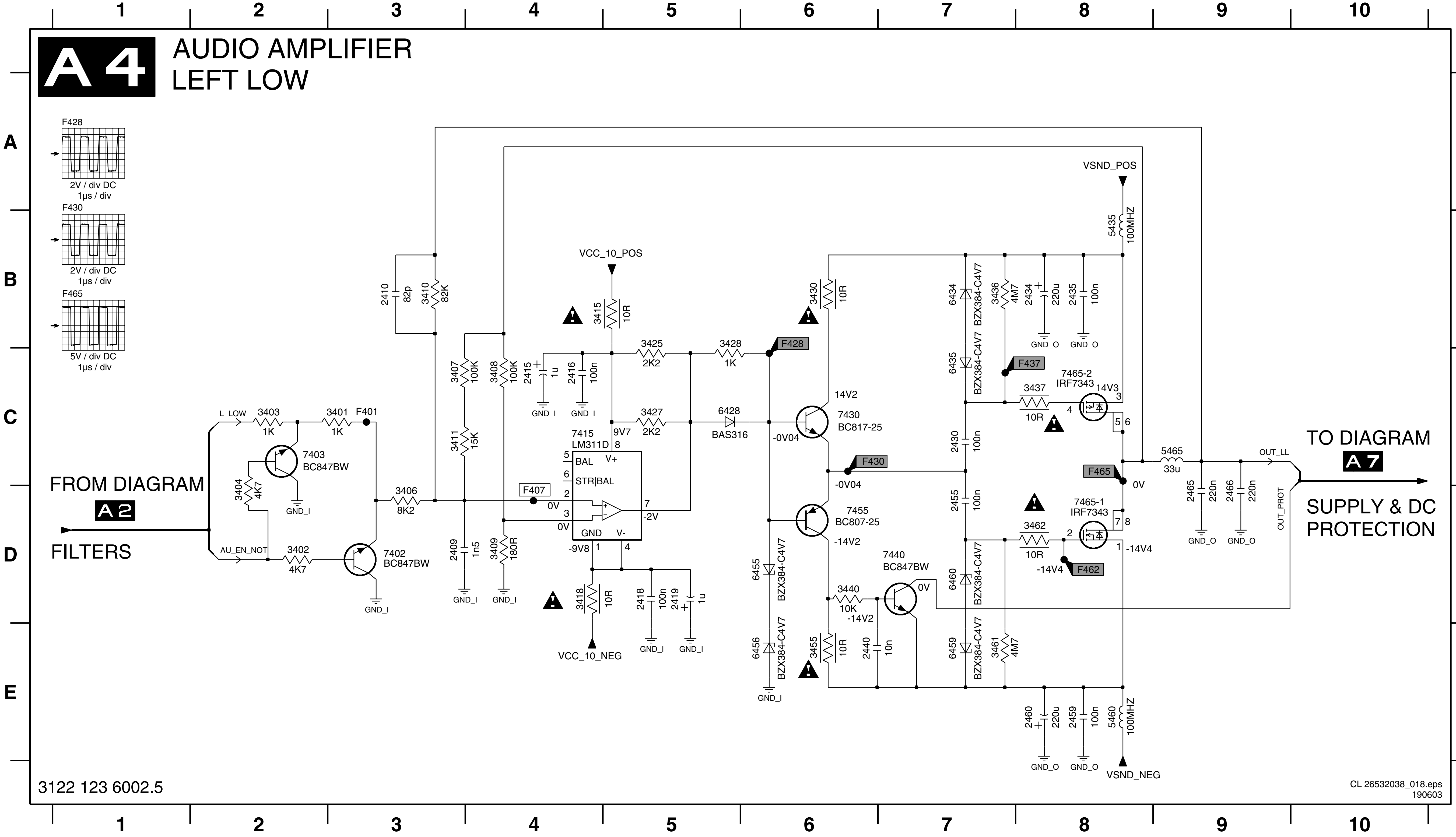
2309 D4
2310 B3
2315 C4
2316 C5
2318 D5
2319 D5
2330 C7
2334 B8
2335 B8
2340 E7
2355 D7
2359 E8
2360 E8
2365 C9
2366 C9
3301 C3
3302 D3
3303 C2
3304 D2
3306 C3
3307 C4
3308 C4
3309 D4
3310 B3
3311 C4
3315 B5
3318 D5
3325 B5
3327 C5
3328 B6
3330 B6
3336 B8
3337 C8
3340 D6
3355 E6
3361 E8
3362 D8
5335 B8
5360 E8
5365 C9
6328 C6
6334 B7
6335 C7
6355 D6
6356 E6
6359 E7
6360 D7
7302 D3
7303 C3
7315 C4
7330 C6
7340 D7
7355 D6
7365-1 D8
7365-2 C8
C301 E3
C302 E3
F301 C3
F307 C4
F328 B6
F330 C7
F337 C8
F362 D8
F365 C8


A3
AUDIO AMPLIFIER
LEFT HIGH
1 2 3 4 5 6 7 8 9 10
A B C D E
F328
2V / div DC
1µs / div
F330
2V / div DC
1µs / div
F365
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
L_HIGH
AU_EN_NOT
3303
1K
3301
1K
F301
7303
BC847BW
3304
4K7
GND_I
3302
4K7
7302
BC847BW
3306
8K2
2310
82p
3310
82K
3307
100K
3308
100K
3311
1R
2309
1n5
3309
180R
F307
VCC_10_POS
3315
10R
2315
1u
2316
100n
3325
2K2
3328
1K
F328
3327
2K2
6328
BAS316
7315
LM311D
9V7
8
5
BAL
V+
6
STR|BAL
2
0V
3
0V
GND
V-
7
-2V
-9V8
1
4
3318
10R
VCC_10_NEG
2318
100n
2319
1u
3330
10R
14V2
7330
BC817-25
-0V04
F330
-0V04
7355
BC807-25
-14V2
6355
BZX384-C4V7
6356
BZX384-C4V7
3340
10K
-14V2
7340
BC847BW
0V
2340
10n
3355
10R
6334
BZX384-C4V7
6335
BZX384-C4V7
3336
4M7
2334
220u
2335
100n
GND_O
F337
3337
10R
7365-2
IRF7343
14V3
3
4
5 6
VSND_POS
5335
100MHZ
2330
100n
2355
100n
F365
0V
7365-1
IRF7343
7 8
3362
10R
2
1
-14V4
-14V4
F362
6360
BZX384-C4V7
6359
BZX384-C4V7
3361
4M7
2360
220u
2359
100n
5360
100MHZ
VSND_NEG
5365
33u
OUT_LH
2365
220n
2366
220n
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
C302
C301
3122 123 6002.5
CL 26532038_017.eps
190603

Audio Panel & Supply: Left Low

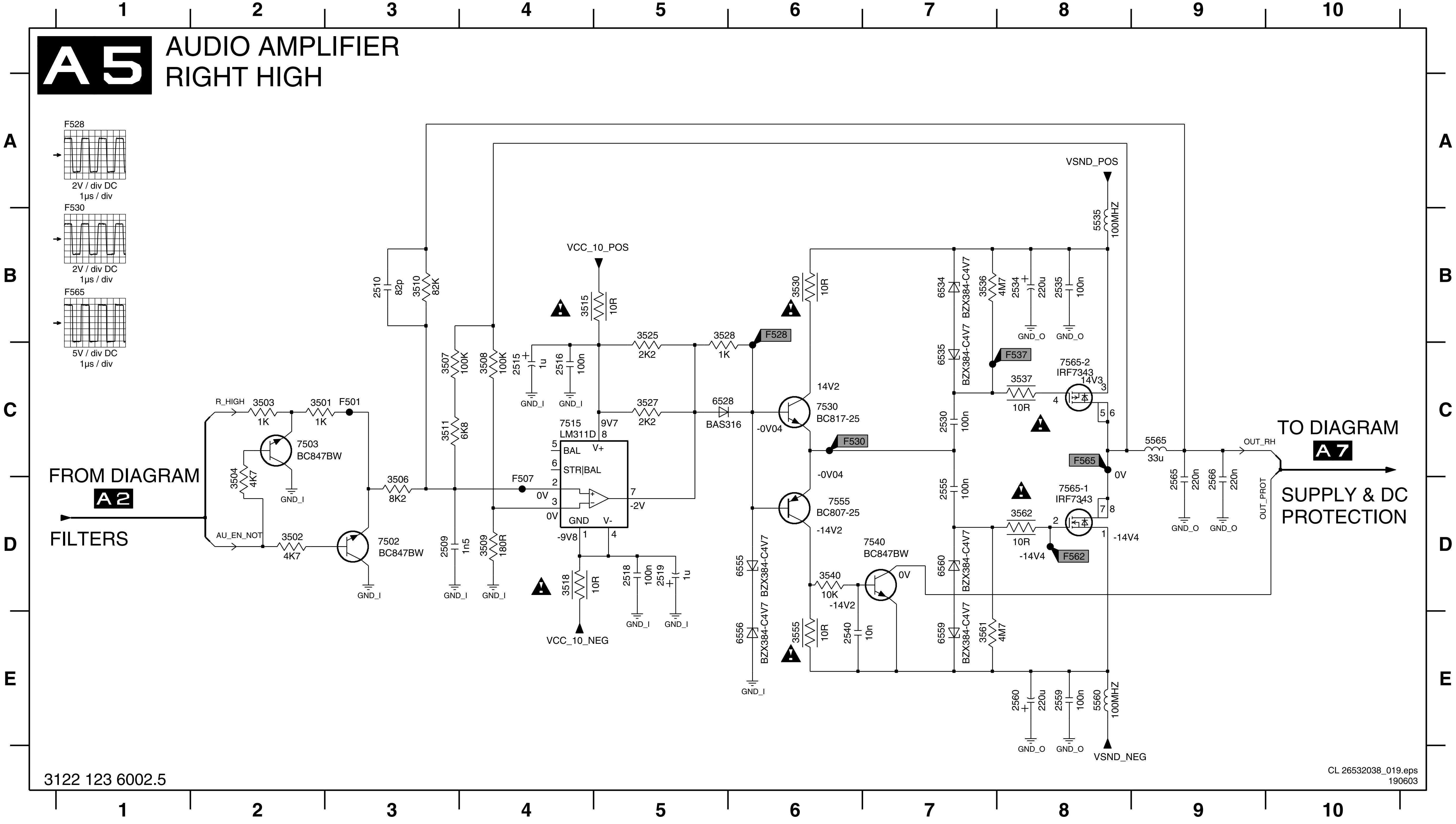
2409	D3
2410	B3
2415	C4
2416	C4
2418	D5
2419	D5
2430	C7
2434	B8
2435	B8
2440	E6
2455	D7
2459	E8
2460	E8
2465	D9
2466	D9
3401	C3
3402	D2
3403	C2
3404	D2
3406	C3
3407	C3
3408	C4
3409	D4
3410	B3
3411	C3
3415	B4
3418	D4
3425	B5
3427	C5
3428	B5
3430	B6
3436	B7
3437	C8
3440	D6
3455	E6
3461	E7
3462	D8
5435	B8
5460	E8
5465	C9
6428	C5
6434	B7
6435	C7
6455	D6
6456	E6
6459	E7
6460	D7
7402	D3
7403	C2
7415	C4
7430	C6
7440	D7
7455	D6
7465-1	D8
7465-2	C8
F401	C3
F407	D4
F428	B6
F430	C6
F437	C8
F462	D8
F465	C8

A 4 AUDIO AMPLIFIER LEFT LOW


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F428
2V / div DC
1µs / div
F430
2V / div DC
1µs / div
F465
5V / div DC
1µs / div
FROM DIAGRAM
A 2
FILTERS
L_LOW
AU_EN_NOT
3403
1K
3401
1K
F401
7403
BC847BW
3404
4K7
GND_I
3402
4K7
7402
BC847BW
GND_I
3406
8K2
2410
82p
3410
82K
3407
100K
3411
15K
2409
1n5
GND_I
3408
100K
3409
180R
GND_I
VCC_10_POS
3415
10R
2415
1u
2416
100n
GND_I
GND_I
3425
2K2
3427
2K2
3428
1K
6428
BAS316
F428
9V7
7415
LM311D
8
5 BAL
V+
6 STR|BAL
2
3
F407
0V
0V
7
-2V
GND
V-
-9V8
1
4
3418
10R
VCC_10_NEG
2418
100n
2419
1u
GND_I
GND_I
3430
10R
14V2
7430
BC817-25
-0V04
F430
-0V04
7455
BC807-25
-14V2
6455
BZX384-C4V7
6456
BZX384-C4V7
GND_I
3440
10K
-14V2
7440
BC847BW
0V
3455
10R
2440
10n
6434
BZX384-C4V7
6435
BZX384-C4V7
3436
4M7
2434
220u
2435
100n
GND_O
GND_O
F437
2430
100n
2455
100n
3437
10R
7465-2
IRF7343
14V3
3
4
5
6
3462
10R
7465-1
IRF7343
2
7
8
1
-14V4
-14V4
F462
F465
0V
6460
BZX384-C4V7
6459
BZX384-C4V7
3461
4M7
VSND_POS
5435
100MHZ
2460
220u
2459
100n
5460
100MHZ
GND_O
GND_O
VSND_NEG
5465
33u
2465
220n
2466
220n
GND_O
GND_O
OUT_LL
OUT_PROT
TO DIAGRAM
A 7
SUPPLY & DC PROTECTION
3122 123 6002.5
CL 26532038_018.eps
190603

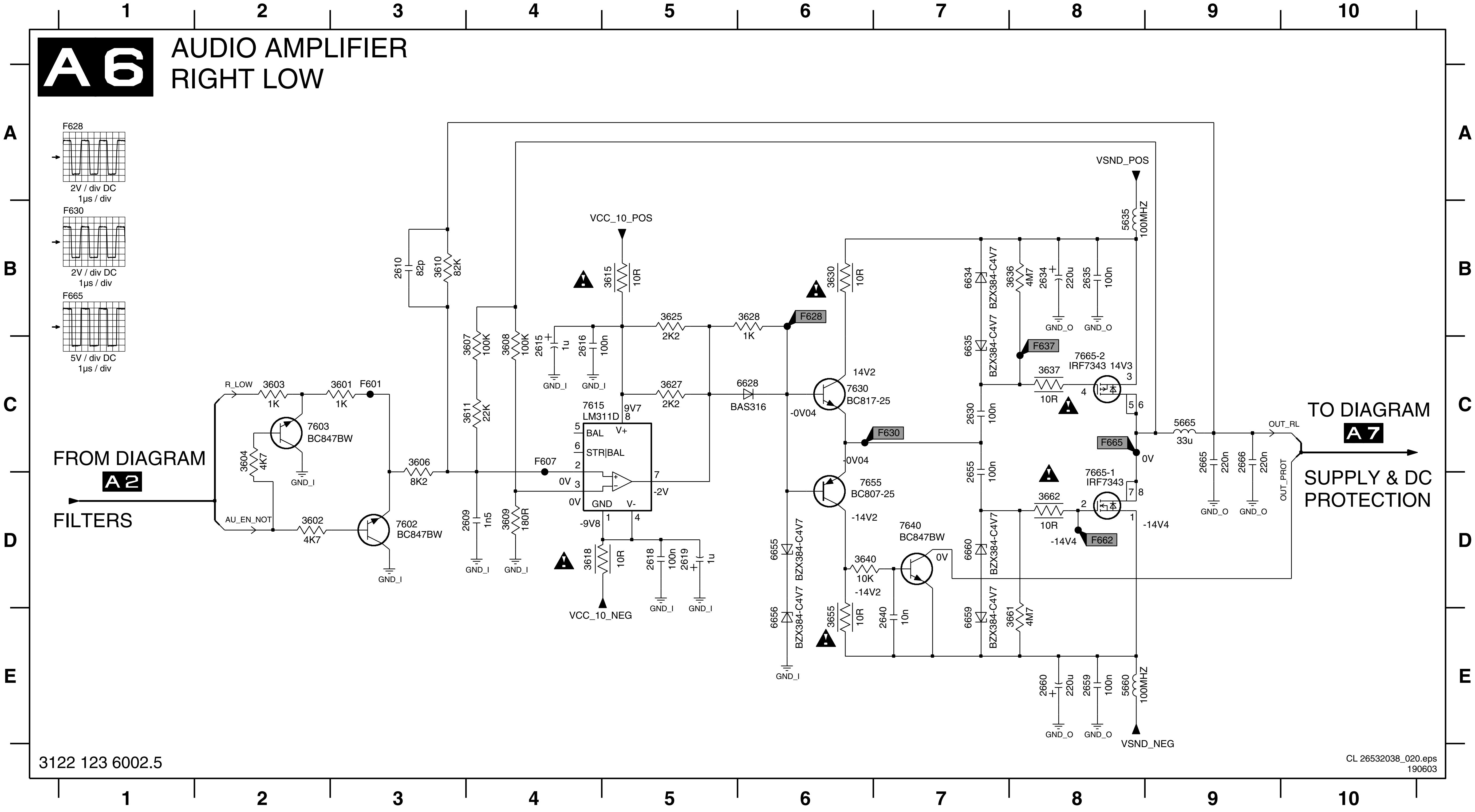
Audio Panel & Supply: Right High

2509	D3
2510	B3
2515	C4
2516	C4
2518	D5
2519	D5
2530	C7
2534	B8
2535	B8
2540	E6
2555	D7
2559	E8
2560	E8
2565	D9
2566	D9
3501	C2
3502	D2
3503	C2
3504	D2
3506	D3
3507	C3
3508	C4
3509	D4
3510	B3
3511	C3
3515	B4
3518	D4
3525	B5
3527	C5
3528	B5
3530	B6
3536	B7
3537	C8
3540	D6
3555	E6
3561	E7
3562	D8
5535	B8
5560	E8
5565	C9
6528	C5
6534	B7
6535	C7
6555	D6
6556	E6
6559	E7
6560	D7
7502	D3
7503	C2
7515	C4
7530	C6
7540	D7
7555	D6
7565-1	D8
7565-2	C8
F501	C3
F507	D4
F528	B6
F530	C6
F537	C8
F562	D8
F565	C8


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
A5
AUDIO AMPLIFIER
RIGHT HIGH
F528
2V / div DC
1µs / div
F530
2V / div DC
1µs / div
F565
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
R_HIGH
AU_EN_NOT
3503 1K
3501 1K
F501
7503 BC847BW
3504 4K7
3502 4K7
7502 BC847BW
GND_I
3506 8K2
2510 82p
3510 82K
3507 100K
3508 100K
3511 6K8
2509 1n5
3509 180R
VCC_10_POS
3515 10R
2515 1u
2516 100n
F507
0V
7515 LM311D
BAL
STR|BAL
GND
V+
V-
9V7
-2V
-9V8
3518 10R
2518 100n
2519 1u
VCC_10_NEG
3525 2K2
3527 2K2
3528 1K
F528
6528 BAS316
-0V04
3530 10R
14V2
7530 BC817-25
F530
-0V04
7555 BC807-25
-14V2
6555 BZX384-C4V7
6556 BZX384-C4V7
3540 10K
-14V2
7540 BC847BW
0V
3555 10R
2540 10n
6534 BZX384-C4V7
6535 BZX384-C4V7
3536 4M7
2534 220u
2535 100n
GND_O
F537
3537 10R
7565-2 IRF7343
14V3
2530 100n
2555 100n
3562 10R
-14V4
F562
7565-1 IRF7343
-14V4
F565
0V
6560 BZX384-C4V7
6559 BZX384-C4V7
3561 4M7
VSND_POS
5535 100MHZ
5560 100MHZ
VSND_NEG
2560 220u
2559 100n
5565 33u
2565 220n
2566 220n
OUT_RH
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
3122 123 6002.5
CL 26532038_019.eps
190603

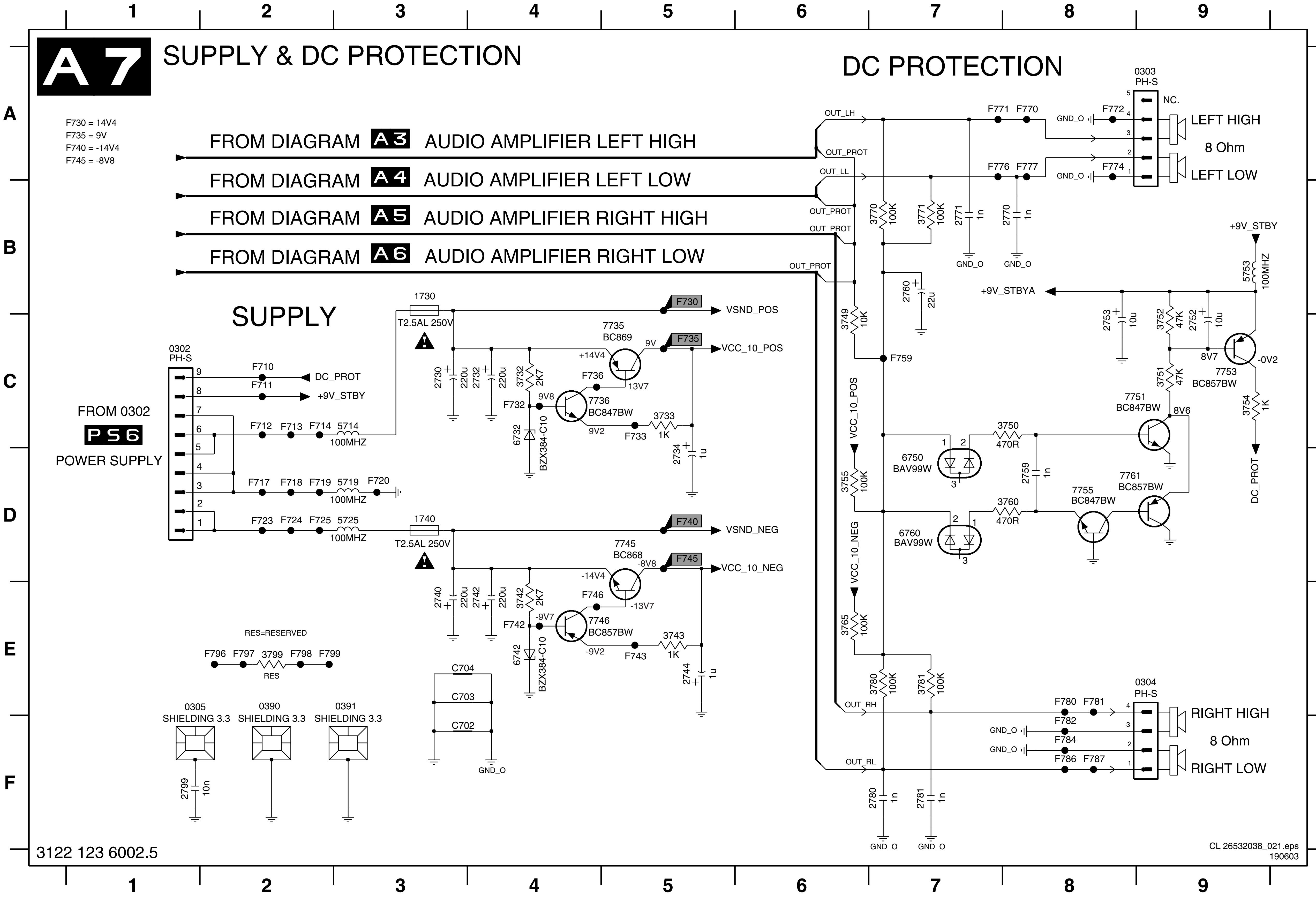
Audio Panel & Supply: Right Low

2609 D4	2616 C4	2630 C7	2640 E7	2660 E8	3601 C3	3604 C2	3608 C4	3611 C4	3625 B5	3630 B6	3640 D6	3662 D8	5665 C9	6635 C7	6659 E7	7603 C2	7640 D7	7665-2 C8	F628 B6	F662 D8
2610 B3	2618 D5	2634 B8	2655 C7	2665 C9	3602 D2	3606 C3	3609 D4	3615 B5	3627 C5	3636 B8	3655 E6	5635 B8	6628 C6	6655 D6	6660 D7	7615 C4	7655 D6	F601 C3	F630 C7	F665 C8
2615 C4	2619 D5	2635 B8	2659 E8	2666 C9	3603 C2	3607 C4	3610 B3	3618 D4	3628 B6	3637 C8	3661 E8	5660 E8	6634 B7	6656 E6	7602 D3	7630 C6	7665-1 D8	F607 C4	F637 C8	



A6
AUDIO AMPLIFIER
RIGHT LOW
1 2 3 4 5 6 7 8 9 10
A B C D E
F628
2V / div DC
1µs / div
F630
2V / div DC
1µs / div
F665
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
R_LOW
AU_EN_NOT
3603 1K
3601 1K
F601
7603 BC847BW
3604 4K7
GND_I
3602 4K7
7602 BC847BW
3606 8K2
2610 82p
3610 82K
3607 100K
3608 100K
3611 22K
2609 1n5
3609 180R
F607
VCC_10_POS
3615 10R
2615 1u
2616 100n
3625 2K2
3627 2K2
3628 1K
6628 BAS316
F628
7615 LM311D
9V7
BAL
V+
STR|BAL
GND
V-
0V
-2V
-9V8
3618 10R
VCC_10_NEG
2618 100n
2619 1u
3630 10R
14V2
7630 BC817-25
-0V04
F630
7655 BC807-25
-14V2
7640 BC847BW
3640 10K
3655 10R
2640 10n
6655 BZX384-C4V7
6656 BZX384-C4V7
6634 BZX384-C4V7
6635 BZX384-C4V7
2630 100n
2655 100n
6660 BZX384-C4V7
6659 BZX384-C4V7
3636 4M7
3661 4M7
2634 220u
2635 100n
GND_O
F637
3637 10R
7665-2 IRF7343
14V3
F665
7665-1 IRF7343
3662 10R
-14V4
F662
VSND_POS
5635 100MHZ
5665 33u
2665 220n
2666 220n
OUT_RL
OUT_PROT
2660 220u
2659 100n
5660 100MHZ
VSND_NEG
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
3122 123 6002.5
CL 26532038_020.eps
190603

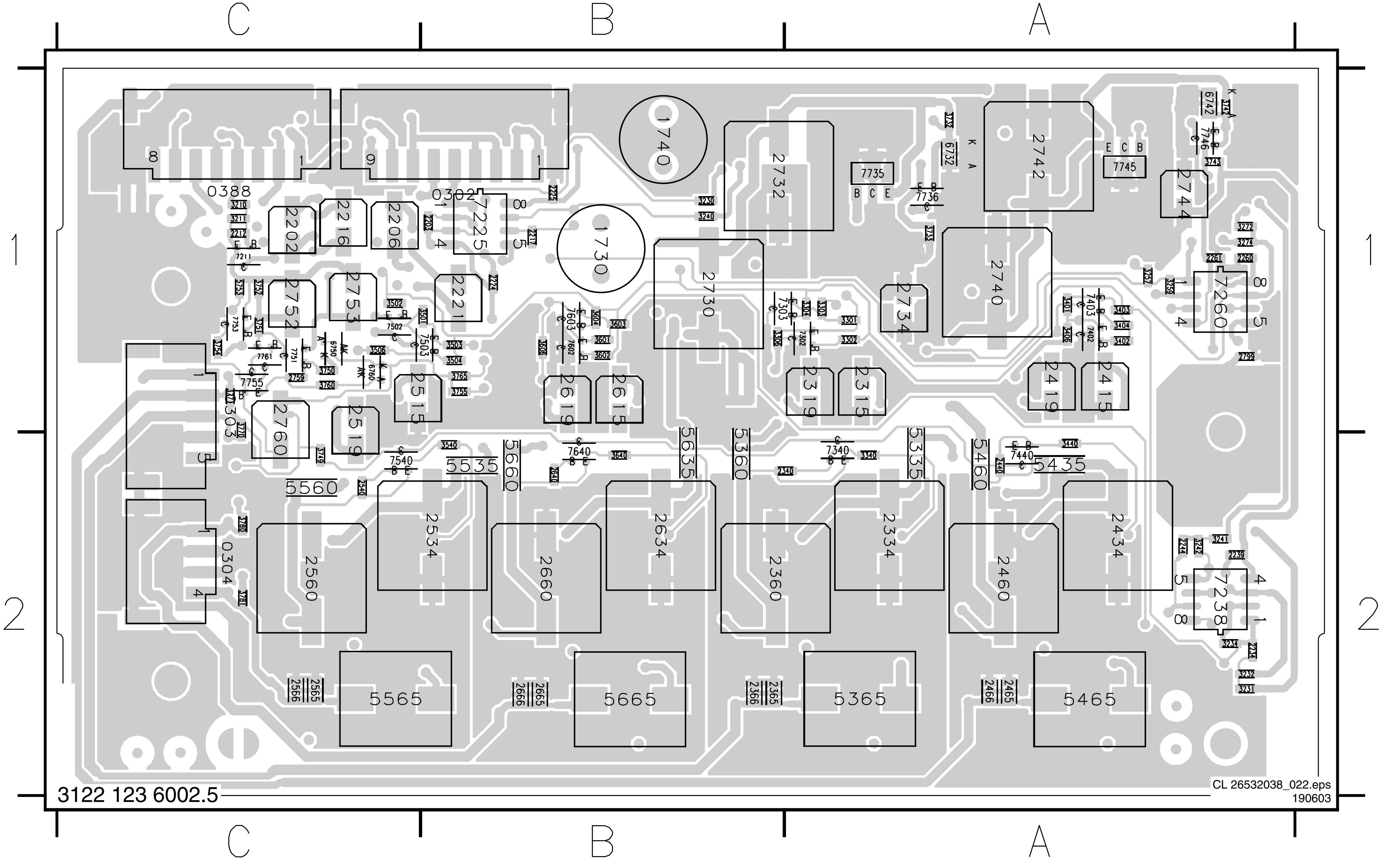
Audio Panel & Supply: Supply and DC Protection


A7 SUPPLY & DC PROTECTION
F730 = 14V4
F735 = 9V
F740 = -14V4
F745 = -8V8
FROM DIAGRAM A3 AUDIO AMPLIFIER LEFT HIGH
FROM DIAGRAM A4 AUDIO AMPLIFIER LEFT LOW
FROM DIAGRAM A5 AUDIO AMPLIFIER RIGHT HIGH
FROM DIAGRAM A6 AUDIO AMPLIFIER RIGHT LOW
SUPPLY
FROM 0302
PS6
POWER SUPPLY
0302 PH-S
F710 DC_PROT
F711 +9V_STBY
F712 F713 F714 5714 100MHZ
F717 F718 F719 5719 100MHZ F720
F723 F724 F725 5725 100MHZ
1730 T2.5AL 250V
1740 T2.5AL 250V
F730 VSND_POS
F735 VCC_10_POS
F740 VSND_NEG
F745 VCC_10_NEG
7735 BC869
7736 BC847BW
7745 BC868
7746 BC857BW
2730 220u 2732 220u 3732 2K7 6732 BZX384-C10
2740 220u 2742 220u 3742 2K7 6742 BZX384-C10
3733 1K 2734 1u 3743 1K 2744 1u
+14V4 9V 13V7 9V8 9V2 F732 F733 F736
-14V4 -8V8 -13V7 -9V7 -9V2 F742 F743 F746
RES=RESERVED
F796 F797 3799 F798 F799 RES
C704 C703 C702 GND_O
0305 SHIELDING 3.3
0390 SHIELDING 3.3
0391 SHIELDING 3.3
2799 10n
DC PROTECTION
0303 PH-S NC.
OUT_LH OUT_PROT OUT_LL OUT_PROT OUT_PROT OUT_PROT
F771 F770 F772 GND_O LEFT HIGH 8 Ohm
F776 F777 F774 GND_O LEFT LOW
3770 100K 3771 100K 2771 1n 2770 1n GND_O GND_O
2760 22u 3749 10K F759
+9V_STBY 5753 100MHZ +9V_STBYA
2753 10u 3752 47K 2752 10u 8V7 7753 BC857BW -0V2
3751 47K 3754 1K DC_PROT
7751 BC847BW 8V6
3750 470R 6750 BAV99W 2759 1n
7761 BC857BW 7755 BC847BW
3760 470R 6760 BAV99W
VCC_10_POS 3755 100K
VCC_10_NEG 3765 100K
3780 100K 3781 100K
0304 PH-S
OUT_RH F780 F781 RIGHT HIGH 8 Ohm
GND_O F782 GND_O F784
OUT_RL F786 F787 RIGHT LOW
2780 1n 2781 1n GND_O GND_O
3122 123 6002.5
CL 26532038_021.eps 190603
A B C D E F
1 2 3 4 5 6 7 8 9

0302	C1
0303	A8
0304	E8
0305	E1
0390	E2
0391	E3
1730	B3
1740	D3
2730	C3
2732	C4
2734	D5
2740	E3
2742	E4
2744	E5
2752	C9
2753	C8
2759	D8
2760	B7
2770	B8
2771	B7
2780	F7
2781	F7
2799	F1
3732	C4
3733	C5
3742	E4
3743	E5
3749	C6
3750	C8
3751	C9
3752	C9
3754	C9
3755	D6
3760	D8
3765	E6
3770	B7
3771	B7
3780	E7
3781	E7
3799	E2
5714	C3
5719	D3
5725	D3
5753	B9
6732	C4
6742	E4
6750	D7
6760	D7
7735	C5
7736	C4
7745	D5
7746	E4
7751	C8
7753	C9
7755	D8
7761	D9
C702	F3
C703	E3
C704	E3
F710	C2
F711	C2
F712	C2
F713	C2
F714	C2
F717	D2
F718	D2
F719	D2
F720	D3
F723	D2
F724	D2
F725	D2
F730	B5
F732	C4
F733	C5
F735	C5
F736	C4
F740	D5
F742	E4
F743	E5
F745	D5
F746	E4
F759	C7
F770	A8
F771	A8
F772	A8
F774	A8
F776	A8
F777	A8
F780	E8
F781	E8
F782	F8
F784	F8
F786	F8
F787	F8
F796	E2
F797	E2
F798	E2
F799	E2

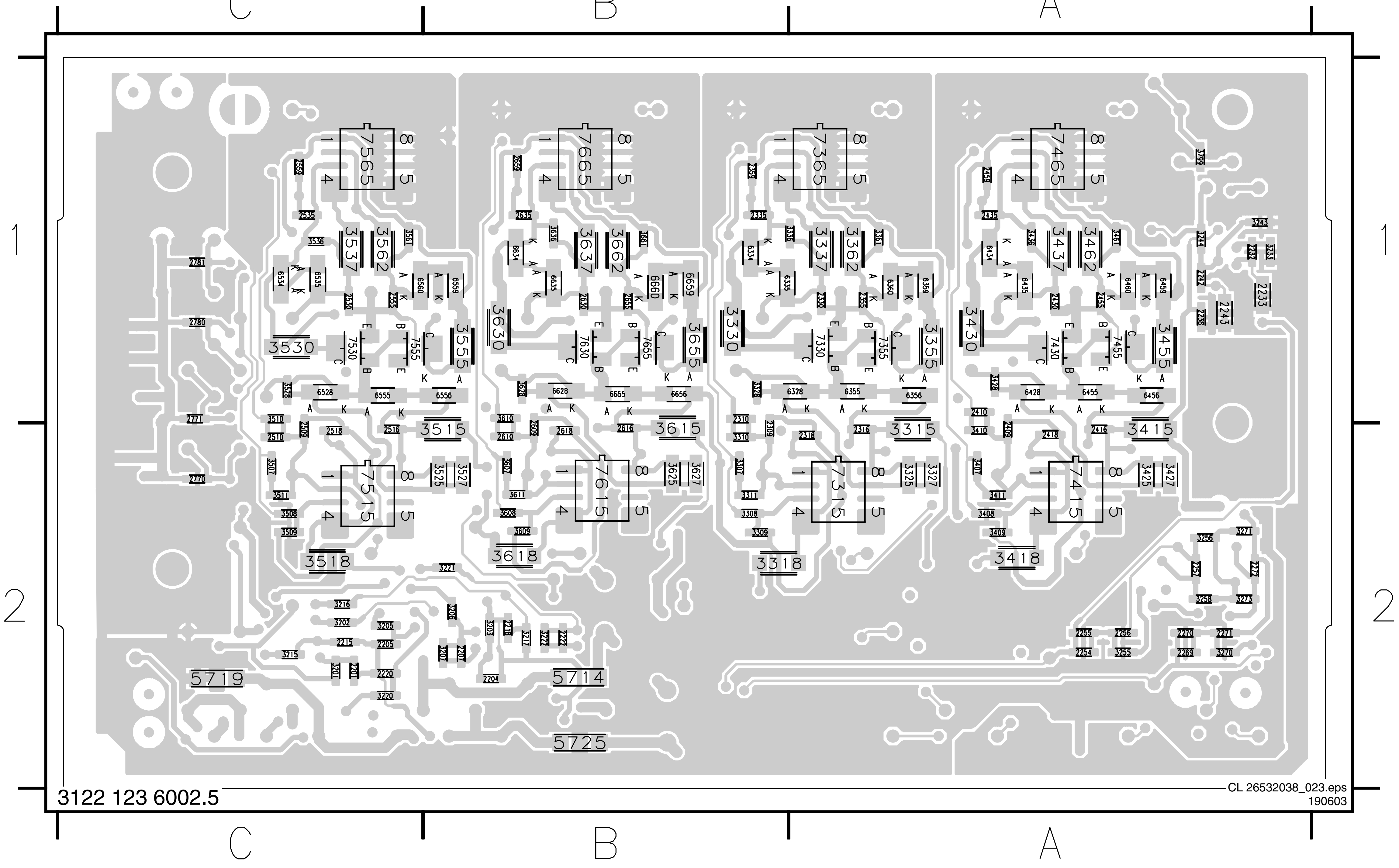
Layout Audio Panel (Top Side)

0302	B1	2216	C1	2315	A1	2440	A2	2566	C2	2734	A1	3211	C1	3272	A1	3403	A1	3601	B1	3749	C2	3780	C2	5565	C2	7225	B1	7503	B1	7753	C1
0303	C1	2217	B1	2319	A1	2460	A2	2615	B1	2740	A1	3230	B1	3274	A1	3404	A1	3602	B1	3750	C1	3781	C2	5635	B2	7238	A2	7540	C2	7755	C1
0304	C2	2221	B1	2334	A2	2465	A2	2619	B1	2742	A1	3231	A2	3301	A1	3406	A1	3603	B1	3751	C1	5335	A2	5660	B2	7260	A1	7602	B1	7761	C1
0388	C1	2224	B1	2340	A2	2466	A2	2634	B2	2744	A1	3232	A2	3302	A1	3440	A2	3604	B1	3752	C1	5360	B2	5665	B2	7302	A1	7603	B1		
1730	B1	2225	B1	2360	B2	2515	C1	2640	B2	2752	C1	3234	A2	3303	A1	3501	B1	3606	B1	3754	C1	5365	A2	5753	C1	7303	B1	7640	B2		
1740	B1	2234	A2	2365	B2	2519	C1	2660	B2	2753	C1	3240	B1	3304	A1	3502	C1	3640	B2	3755	B1	5435	A2	6732	A1	7340	A2	7735	A1		
2202	C1	2239	A2	2366	B2	2534	B2	2665	B2	2759	C1	3241	A2	3306	B1	3503	B1	3732	A1	3760	C1	5460	A2	6742	A1	7402	A1	7736	A1		
2203	B1	2244	A2	2415	A1	2540	C2	2666	B2	2760	C1	3242	A2	3340	A2	3504	B1	3733	A1	3765	B1	5465	A2	6750	C1	7403	A1	7745	A1		
2206	C1	2260	A1	2419	A1	2560	C2	2730	B1	2799	A1	3257	A1	3401	A1	3506	C1	3742	A1	3770	C1	5535	B2	6760	C1	7440	A2	7746	A1		
2212	C1	2261	A1	2434	A2	2565	C2	2732	B1	3210	C1	3259	A1	3402	A1	3540	B2	3743	A1	3771	C1	5560	C2	7211	C1	7502	C1	7751	C1		


C
B
A
1
2
0388
0302
1740
1730
2732
2742
7735
7745
2744
2202
2216
2206
7225
2752
2753
2221
2730
2740
2734
7260
2319
2315
2419
2415
2515
2619
2615
2760
2519
0303
0304
7755
7540
5535
5660
7640
5635
5360
7340
5335
5460
7440
5435
5560
2560
2534
2660
2634
2360
2334
2460
2434
7238
5565
5665
5365
5465
3122 123 6002.5
CL 26532038_022.eps
190603

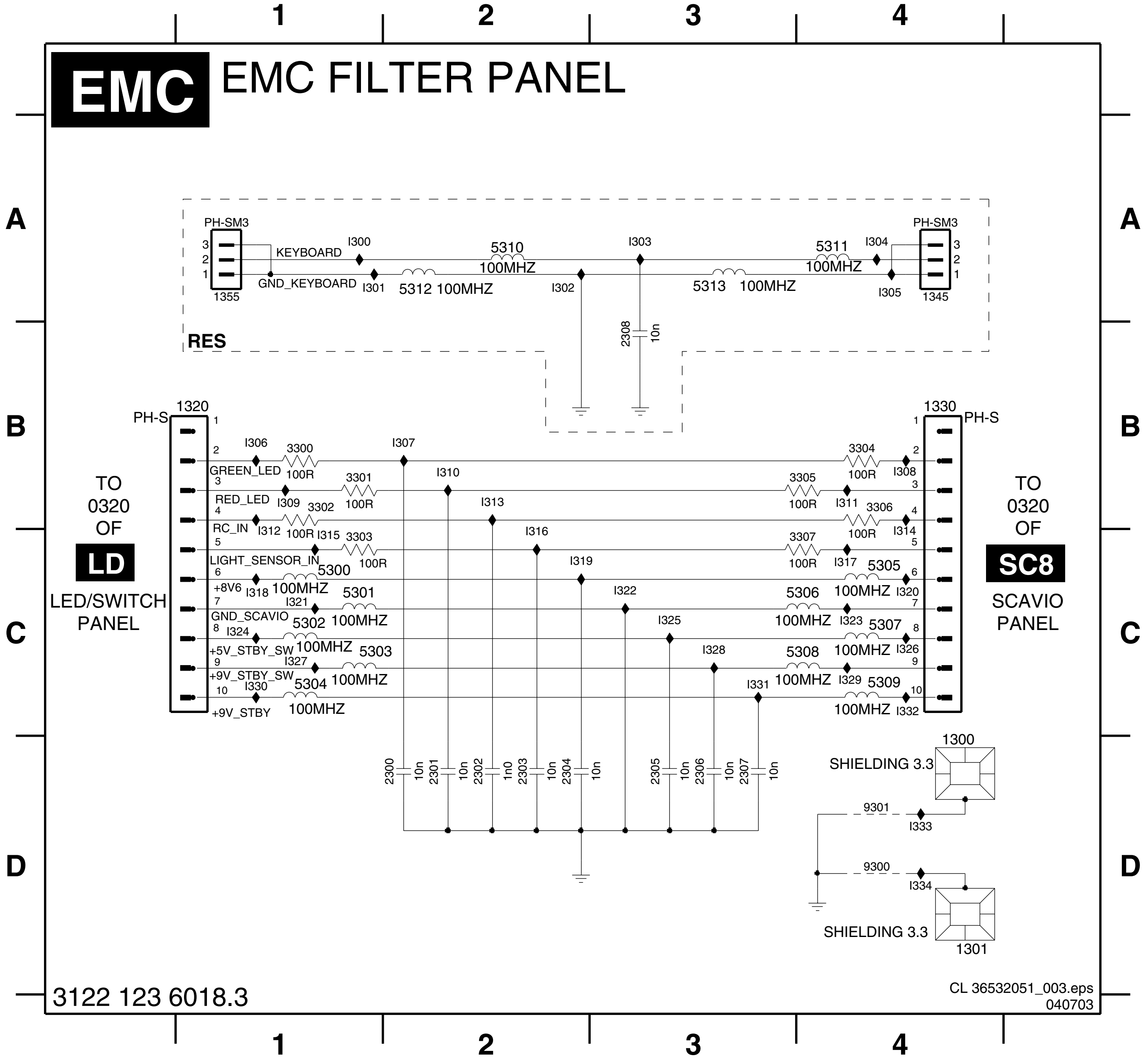
Layout Audio Panel (Bottom Side)

2201	C2	2255	A2	2359	B1	2535	C1	2781	C1	3243	A1	3318	B2	3411	A2	3509	C2	3607	B2	3661	B1	6434	A1	6634	B1	7515	C2
2204	B2	2256	A2	2409	A2	2555	C1	3201	C2	3244	A1	3325	A2	3415	A2	3510	C1	3608	B2	3662	B1	6435	A1	6635	B1	7530	C1
2205	C2	2257	A2	2410	A1	2559	C1	3202	C2	3255	A2	3327	A2	3418	A2	3511	C2	3609	B2	3799	A1	6455	A1	6655	B1	7555	C1
2207	B2	2269	A2	2416	A2	2609	B2	3203	B2	3256	A2	3328	B1	3425	A2	3515	B2	3610	B1	5714	B2	6456	A1	6656	B1	7565	C1
2215	C2	2270	A2	2418	A2	2610	B2	3205	C2	3258	A2	3330	B1	3427	A2	3518	C2	3611	B2	5719	C2	6459	A1	6659	B1	7615	B2
2218	B2	2271	A2	2430	A1	2616	B2	3206	B2	3270	A2	3336	A1	3428	A1	3525	B2	3615	B2	5725	B2	6460	A1	6660	B1	7630	B1
2220	C2	2272	A2	2435	A1	2618	B2	3207	B2	3271	A2	3337	A1	3430	A1	3527	B2	3618	B2	6328	A1	6528	C1	7315	A2	7655	B1
2222	B2	2309	B2	2455	A1	2630	B1	3215	C2	3273	A2	3355	A1	3436	A1	3528	C1	3625	B2	6334	B1	6534	C1	7330	A1	7665	B1
2232	A1	2310	B1	2459	A1	2635	B1	3216	C2	3307	B2	3361	A1	3437	A1	3530	C1	3627	B2	6335	B1	6535	C1	7355	A1		
2233	A1	2316	A2	2509	C2	2655	B1	3217	B2	3308	B2	3362	A1	3455	A1	3536	C1	3628	B1	6355	A1	6555	C1	7365	A1		
2238	A1	2318	A2	2510	C2	2659	B1	3220	C2	3309	B2	3407	A2	3461	A1	3537	C1	3630	B1	6356	A1	6556	B1	7415	A2		
2242	A1	2330	A1	2516	C2	2770	C2	3221	B2	3310	B2	3408	A2	3462	A1	3555	B1	3636	B1	6359	A1	6559	B1	7430	A1		
2243	A1	2335	B1	2518	C2	2771	C1	3222	B2	3311	B2	3409	A2	3507	C2	3561	C1	3637	B1	6360	A1	6560	C1	7455	A1		
2254	A2	2355	A1	2530	C1	2780	C1	3233	A1	3315	A2	3410	A2	3508	C2	3562	C1	3655	B1	6428	A1	6628	B1	7465	A1		


C
B
A
1
2
7565
7665
7365
7465
3530
3630
3330
3430
3555
3655
3355
3455
3515
3615
3315
3415
7515
7615
7315
7415
3518
3618
3318
3418
5719
5714
5725
3122 123 6002.5
CL 26532038_023.eps
190603

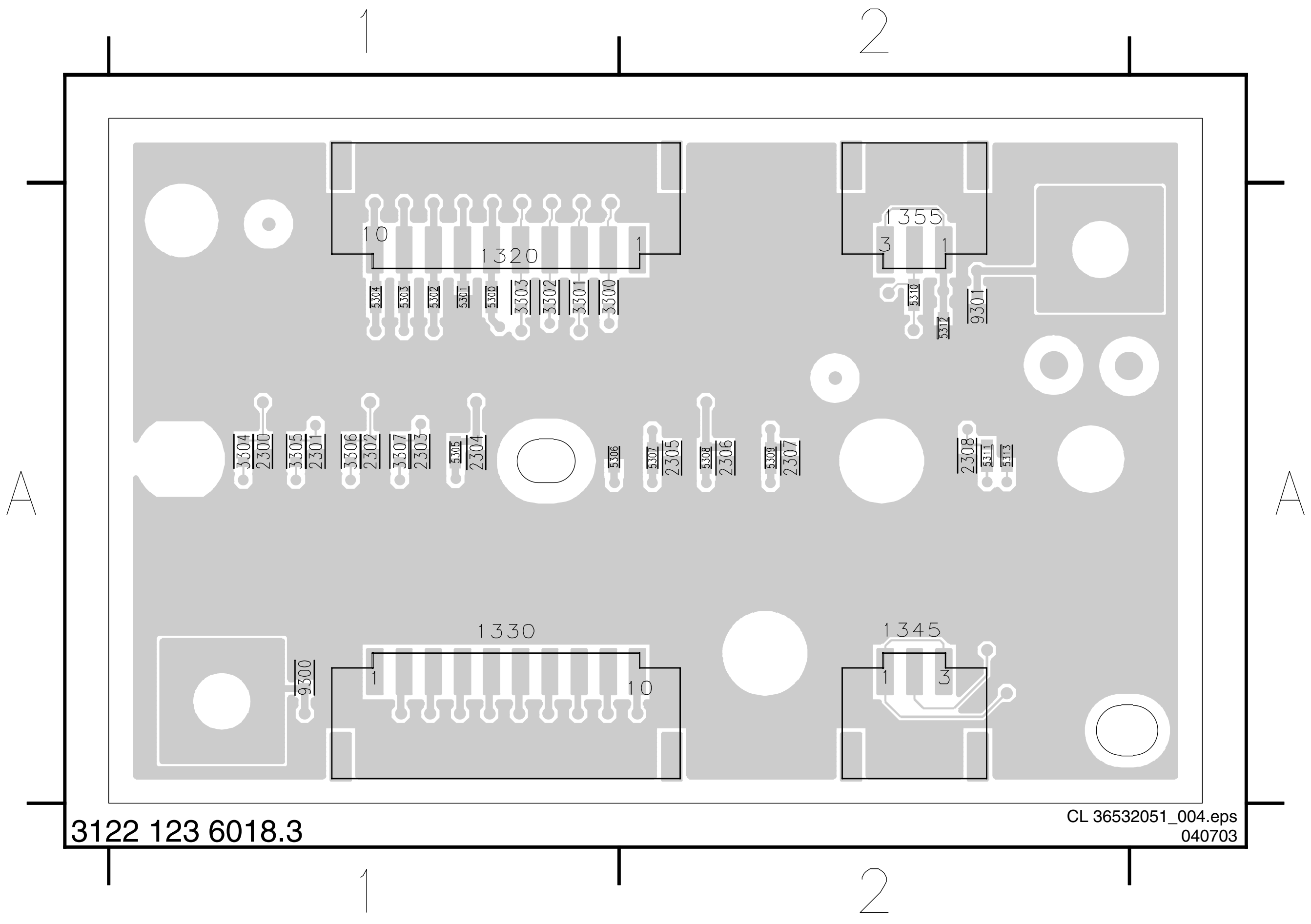
EMC Filter Panel

1300 D4	2301 D2	2308 A3	3306 B4	5305 C4	5312 A2	I303 A3	I310 B2	I317 C4	I324 C1	I331 C3
1301 D4	2302 D2	3300 B1	3307 C4	5306 C4	5313 A3	I304 A4	I311 B4	I318 C1	I325 C3	I332 C4
1320 B1	2303 D2	3301 B1	5300 C1	5307 C4	9300 D4	I305 A4	I312 C1	I319 C2	I326 C4	I333 D4
1330 B4	2304 D2	3302 B1	5301 C1	5308 C4	9301 D4	I306 B1	I313 B2	I320 C4	I327 C1	I334 D4
1345 A4	2305 D3	3303 C1	5302 C1	5309 C4	I300 A1	I307 B2	I314 C4	I321 C1	I328 C3	
1355 A1	2306 D3	3304 B4	5303 C1	5310 A2	I301 A1	I308 B4	I315 C1	I322 C3	I329 C4	
2300 D2	2307 D3	3305 B4	5304 C1	5311 A4	I302 A2	I309 B1	I316 C2	I323 C4	I330 C1	

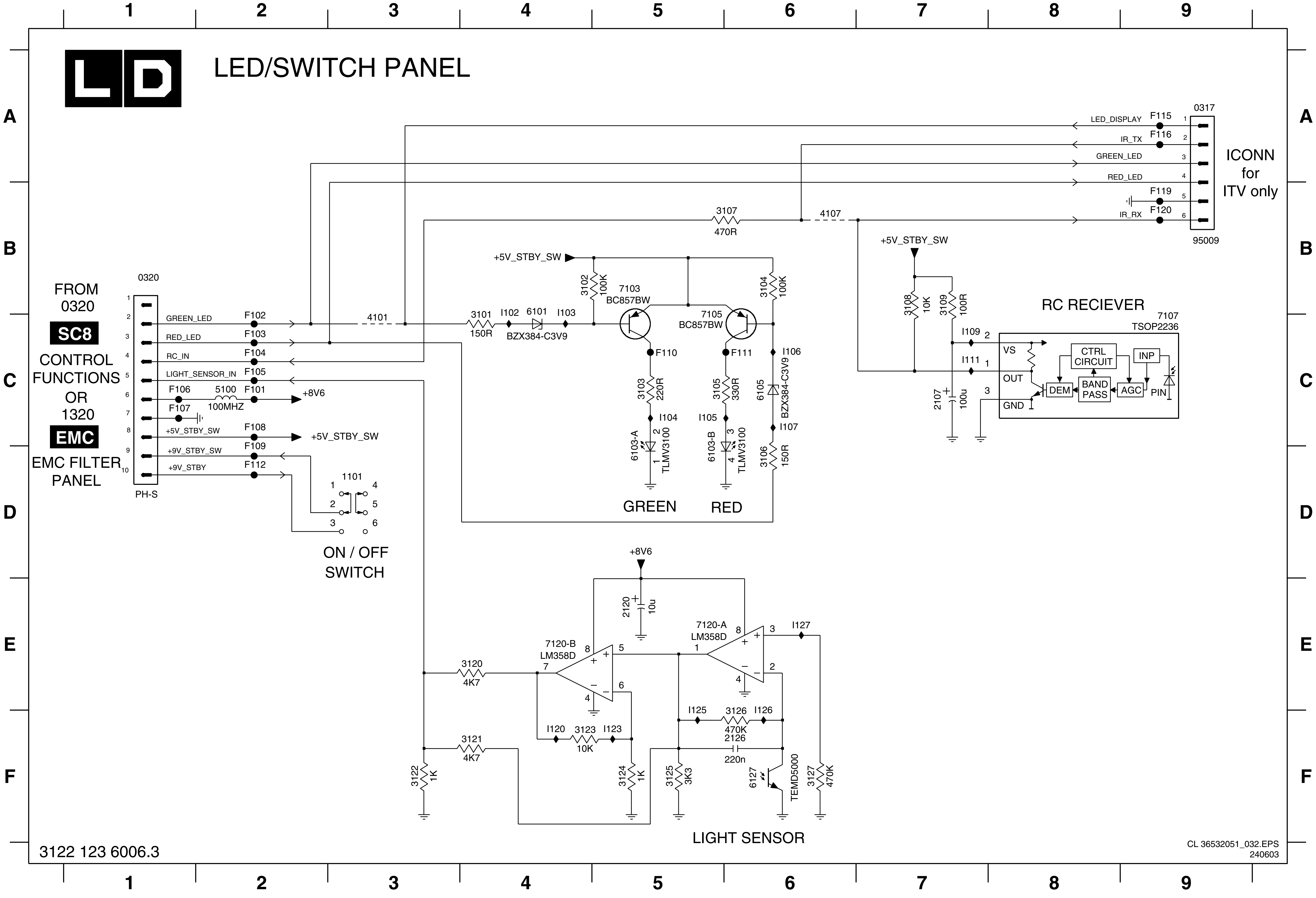

1
2
3
4
A
B
C
D
EMC
EMC FILTER PANEL
PH-SM3
KEYBOARD
GND_KEYBOARD
I300
I301
5310
100MHZ
5312 100MHZ
I302
I303
2308
10n
5313 100MHZ
5311
100MHZ
I304
I305
1355
1345
RES
1320
PH-S
1330
PH-S
TO
0320
OF
LD
LED/SWITCH
PANEL
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
+8V6
GND_SCAVIO
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
3300
3301
3302
3303
100R
5300
5301
5302
5303
5304
100MHZ
3304
3305
3306
3307
5305
5306
5307
5308
5309
TO
0320
OF
SC8
SCAVIO
PANEL
2300
2301
2302
2303
2304
2305
2306
2307
10n
1n0
SHIELDING 3.3
1300
1301
9301
9300
I333
I334
3122 123 6018.3
CL 36532051_003.eps
040703

Layout EMC Filter Panel (Top Side)

1320 A1	2300 A1	2304 A1	2308 A2	3303 A1	3307 A1	5303 A1	5307 A2	5311 A2	9301 A2
1330 A1	2301 A1	2305 A2	3300 A1	3304 A1	5300 A1	5304 A1	5308 A2	5312 A2	
1345 A2	2302 A1	2306 A2	3301 A1	3305 A1	5301 A1	5305 A1	5309 A2	5313 A2	
1355 A2	2303 A1	2307 A2	3302 A1	3306 A1	5302 A1	5306 A1	5310 A2	9300 A1	

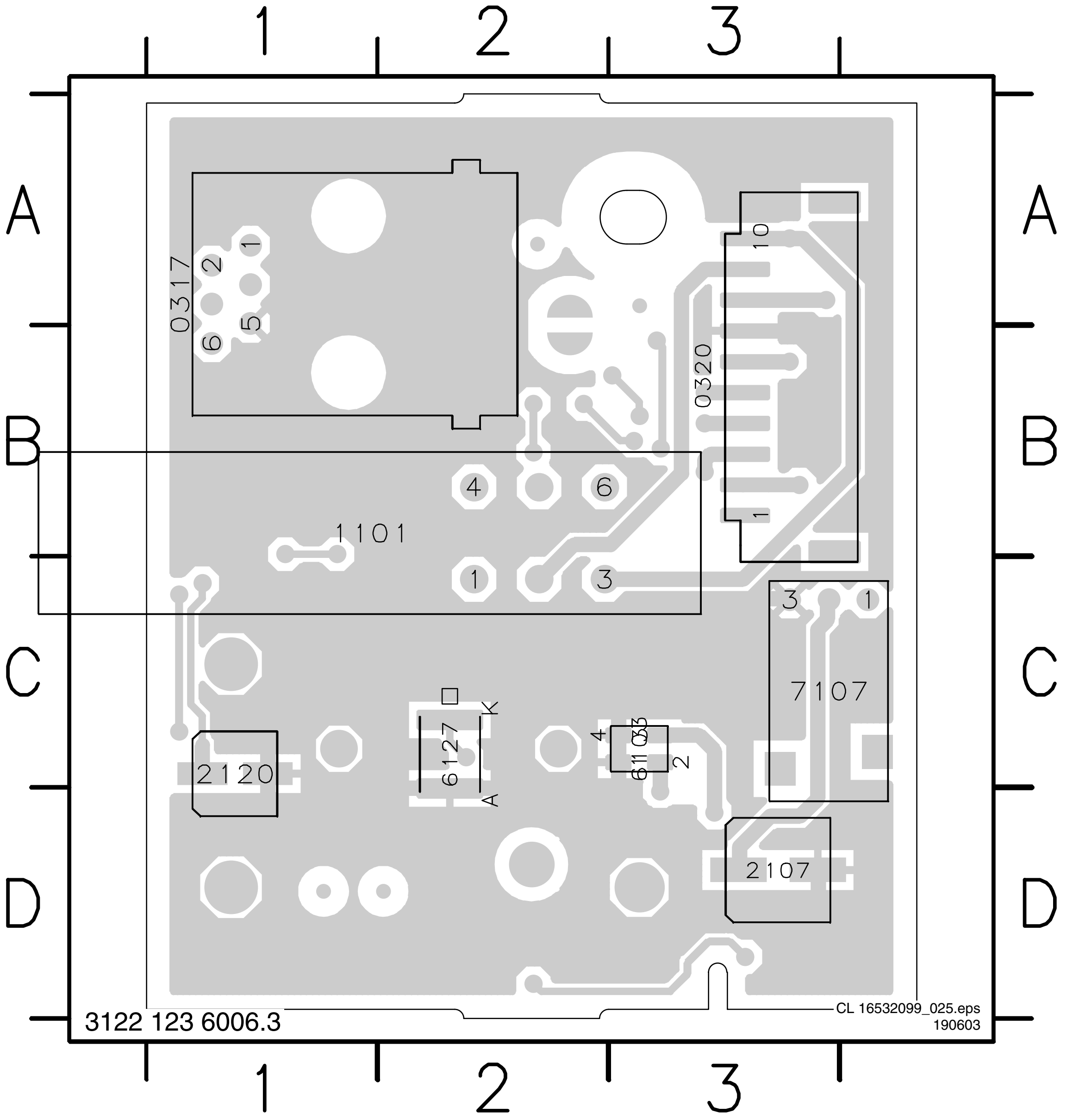

1
2
A
1320
1355
1330
1345
9301
9300
3122 123 6018.3
CL 36532051_004.eps
040703

LED/Switch Panel (for Sets with Speakers)


LD
LED/SWITCH PANEL
FROM 0320
SC8
CONTROL FUNCTIONS OR 1320
EMC
EMC FILTER PANEL
0320
PH-S
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
F101
F102
F103
F104
F105
F106
F107
F108
F109
F112
5100
100MHZ
+8V6
+5V_STBY_SW
4101
3101
150R
I102
6101
I103
BZX384-C3V9
3102
100K
7103
BC857BW
7105
BC857BW
3104
100K
F110
F111
I106
3103
220R
3105
330R
6105
BZX384-C3V9
I104
I105
I107
6103-A
TLMV3100
6103-B
TLMV3100
3106
150R
GREEN
RED
1101
ON / OFF SWITCH
0317
LED_DISPLAY
IR_TX
GREEN_LED
RED_LED
IR_RX
F115
F116
F119
F120
ICONN for ITV only
95009
3107
470R
4107
+5V_STBY_SW
3108
10K
3109
100R
I109
I111
2107
100u
RC RECIEVER
7107
TSOP2236
VS
OUT
GND
CTRL CIRCUIT
INP
DEM
BAND PASS
AGC
PIN
+8V6
2120
10u
7120-B
LM358D
7120-A
LM358D
I127
3120
4K7
3121
4K7
3122
1K
I120
3123
10K
I123
3124
1K
I125
3126
470K
I126
2126
220n
3125
3K3
6127
TEMD5000
3127
470K
LIGHT SENSOR
3122 123 6006.3
CL 36532051_032.EPS
240603

0317	A9
0320	B1
1101	D3
2107	C7
2120	E5
2126	F6
3100	C2
3101	C4
3102	B4
3103	C5
3104	B6
3105	C5
3106	D6
3107	B6
3108	B7
3109	B7
3120	E4
3121	F4
3122	F3
3123	F4
3124	F5
3125	F5
3126	F6
3127	F6
4101	C3
4107	B6
6101	C4
6103-A	C5
6103-B	D5
6105	C6
6127	F6
7103	B5
7105	B5
7107	C9
7120-A	E6
7120-B	E4
F101	C2
F102	C2
F103	C2
F104	C2
F105	C2
F106	C1
F107	C1
F108	C2
F109	D2
F110	C5
F111	C6
F112	D2
F115	A9
F116	A9
F119	B9
F120	B9
I102	B4
I103	B4
I104	C5
I105	C5
I106	C6
I107	C6
I109	C7
I111	C7
I120	F4
I123	F5
I125	E5
I126	E6
I127	E6

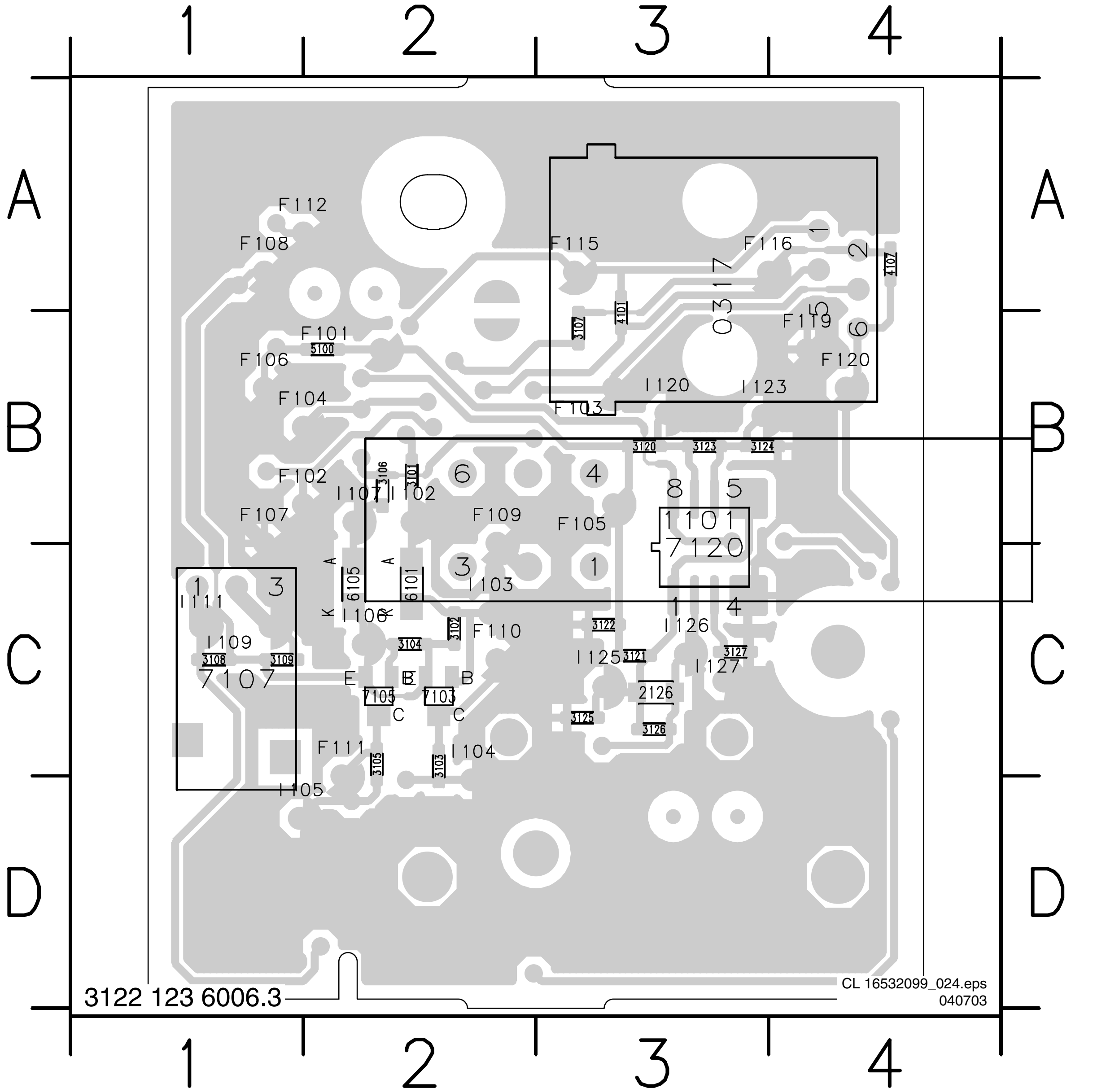
Layout LED/Switch Panel (for Sets with Speakers) (Top Side)


1
2
3
A
B
C
D
0317
0320
1101
7107
2120
6127
6103
2107
10
K
A
3122 123 6006.3

CL 16532099_025.eps
190603

0317	A1
0320	B3
1101	B1
2107	D3
2120	C1
6103	C3
6127	C2
7107	C3

Layout LED/Switch Panel (for Sets with Speakers) (Bottom Side)

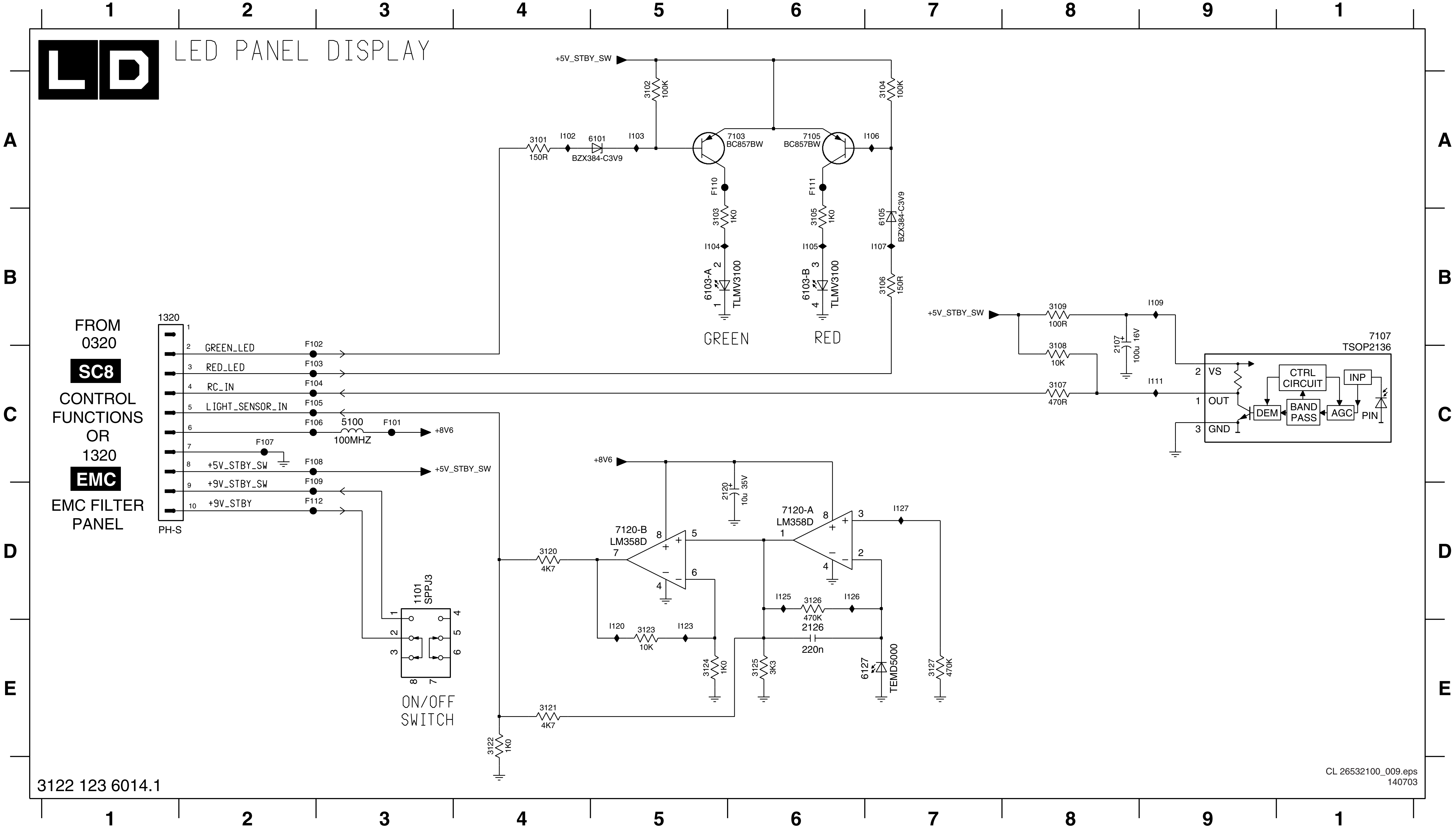

1
2
3
4
A
B
C
D
0317
1101
7120
7107
F112
F108
F115
F116
F101
F106
F104
F119
F120
F103
I120
I123
F102
F107
I107
I102
F109
F105
I111
I103
I106
I126
F110
I109
I125
I127
2126
6105
6101
F111
I104
I105
3122 123 6006.3

CL 16532099_024.eps
040703

0317	A4
1101	B3
2126	C3
3101	B2
3102	C2
3103	C2
3104	C2
3105	C2
3106	B2
3107	B3
3108	C1
3109	C1
3120	B3
3121	C3
3122	C3
3123	B3
3124	B3
3125	C3
3126	C3
3127	C3
4101	B3
4107	A4
5100	B2
6101	C2
6105	C2
7103	C2
7105	C2
7107	C1
7120	C3

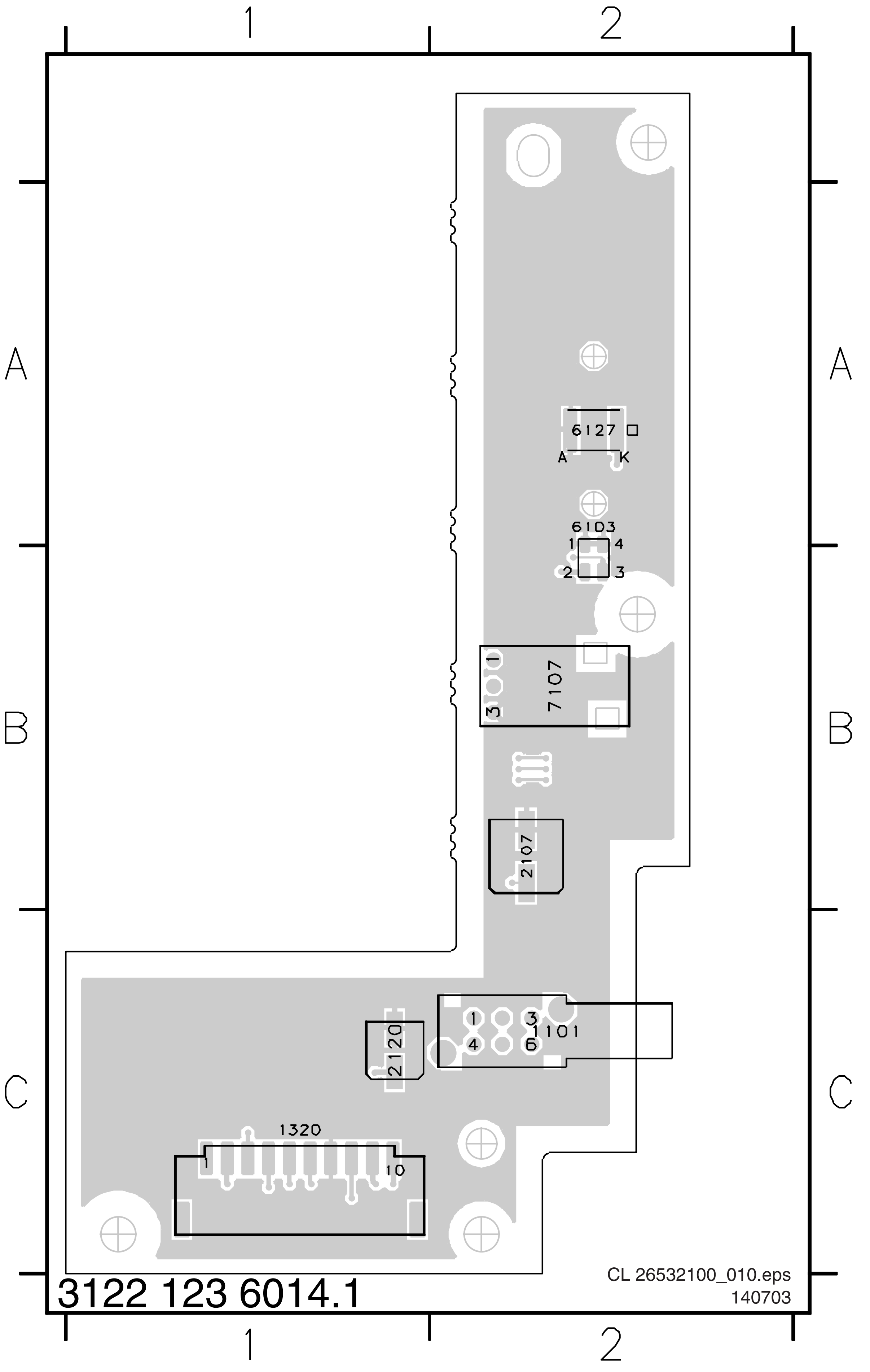
LED Panel Display (for Speakerless Sets)

1101 D3
1320 B1
2107 B8
2120 D5
2126 E6
3101 A4
3102 A5
3103 B5
3104 A7
3105 B6
3106 B7
3107 C8
3108 C8
3109 B8
3120 D4
3121 E4
3122 E4
3123 E5
3124 E5
3125 E6
3126 D6
3127 E7
5100 C2
6101 A5
6103-A B5
6103-B B6
6105 B7
6127 E7
7103 A5
7105 A6
7107 B10
7120-A D6
7120-B D5
F101 C2
F102 C2
F103 C2
F104 C2
F105 C2
F106 C2
F107 C2
F108 C2
F109 D2
F110 A5
F111 A6
F112 D2
I102 A4
I103 A5
I104 B5
I105 B6
I106 A7
I107 B7
I109 B9
I111 C9
I120 E5
I123 E5
I125 D6
I126 D6
I127 D7



LD
LED PANEL DISPLAY
FROM 0320
SC8
CONTROL FUNCTIONS OR 1320
EMC
EMC FILTER PANEL
1320
PH-S
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
F101
F102
F103
F104
F105
F106
F107
F108
F109
F112
5100
100MHZ
+8V6
+5V_STBY_SW
3101 150R
I102
6101 BZX384-C3V9
I103
3102 100K
3104 100K
7103 BC857BW
7105 BC857BW
I106
F110
F111
3103 1K0
3105 1K0
6105 BZX384-C3V9
I104
I105
I107
6103-A TLMV3100
6103-B TLMV3100
3106 150R
GREEN
RED
3109 100R
I109
2107 100u 16V
3108 10K
3107 470R
I111
7107 TSOP2136
VS
OUT
GND
CTRL CIRCUIT
INP
DEM
BAND PASS
AGC
PIN
2120 10u 35V
7120-A LM358D
7120-B LM358D
I127
3120 4K7
3121 4K7
3122 1K0
I120
3123 10K
I123
3124 1K0
I125
3126 470K
I126
2126 220n
3125 3K3
6127 TEMD5000
3127 470K
1101 SPPJ3
ON/OFF SWITCH
3122 123 6014.1
CL 26532100_009.eps
140703

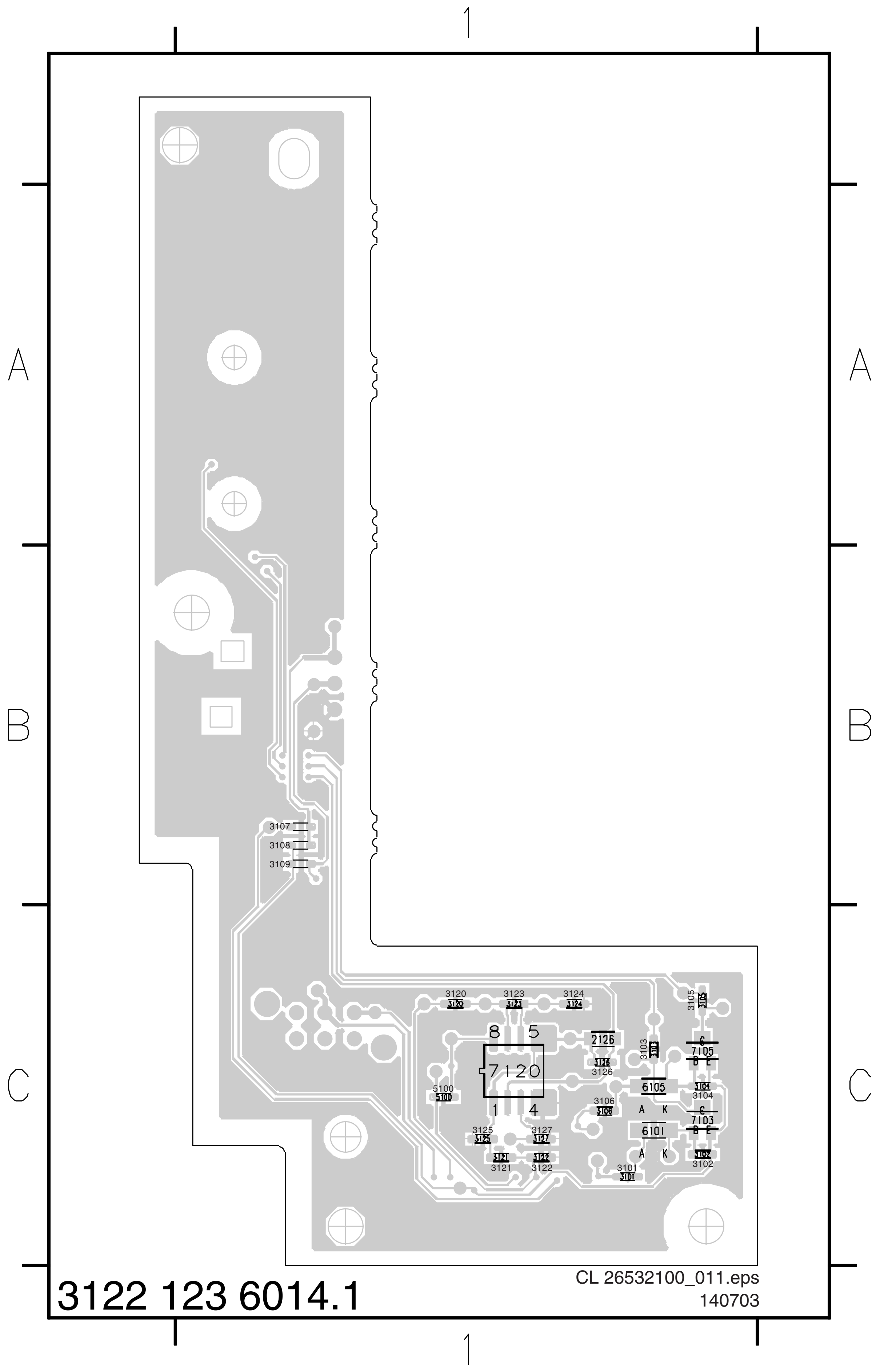
Layout LED Panel Display (for Speakerless Sets) (Top Side)


1
2
A
B
C
6127
A
K
6103
1
4
2
3
7107
1
3
2107
2120
1
3
4
6
1101
1320
1
10
3122 123 6014.1

CL 26532100_010.eps
140703

1101	C 2
1320	C1
2107	B2
2120	C1
6103	A2
6127	A2
7107	B2

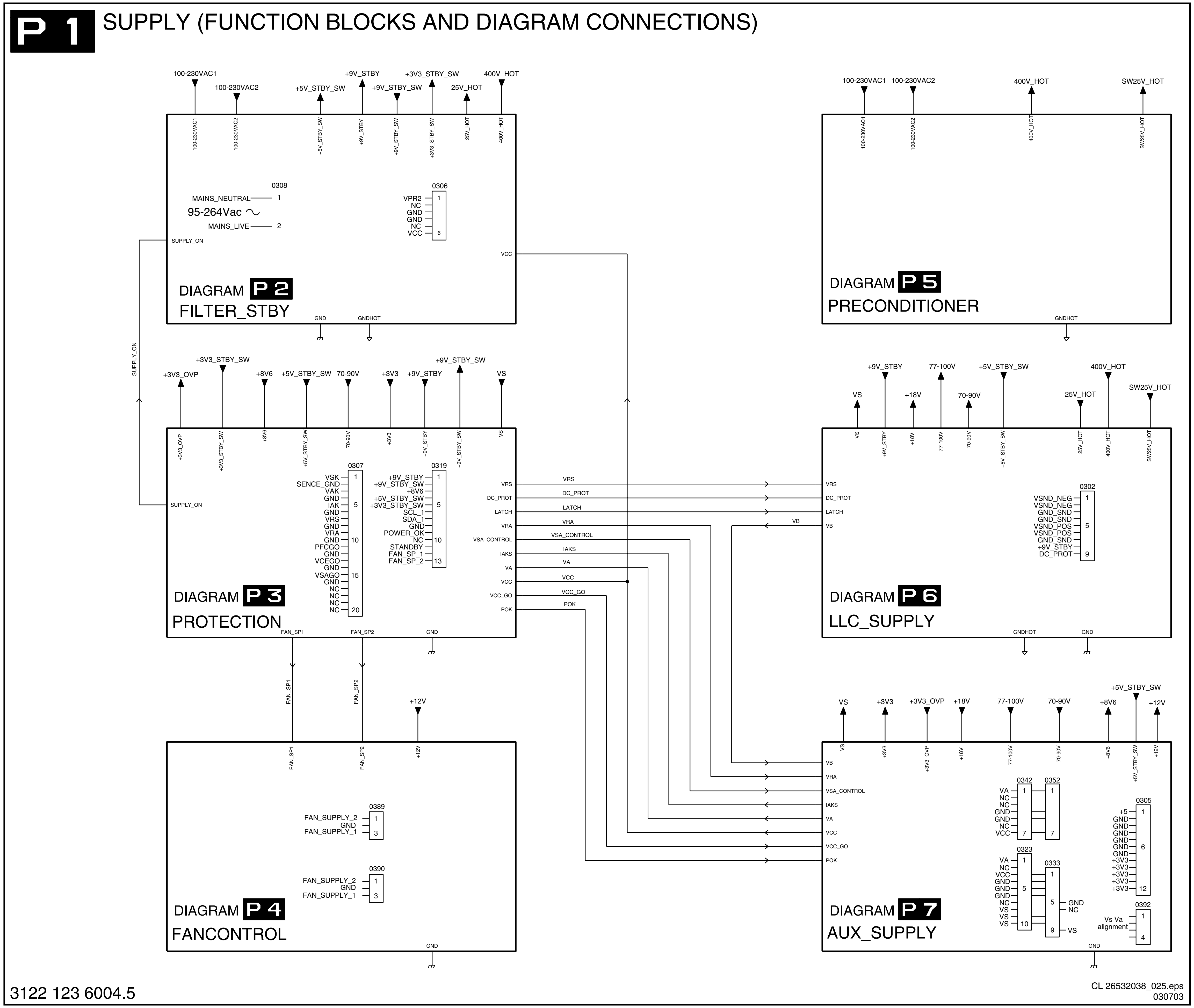
Layout LED Panel Display (for Speakerless Sets) (Bottom Side)


1
A
B
C
3107
3108
3109
3120
3123
3124
3105
2126
3126
3103
7105
7120
8
5
1
4
5100
6105
3104
3106
7103
6101
A
K
3125
3127
3121
3122
3101
3102
3122 123 6014.1

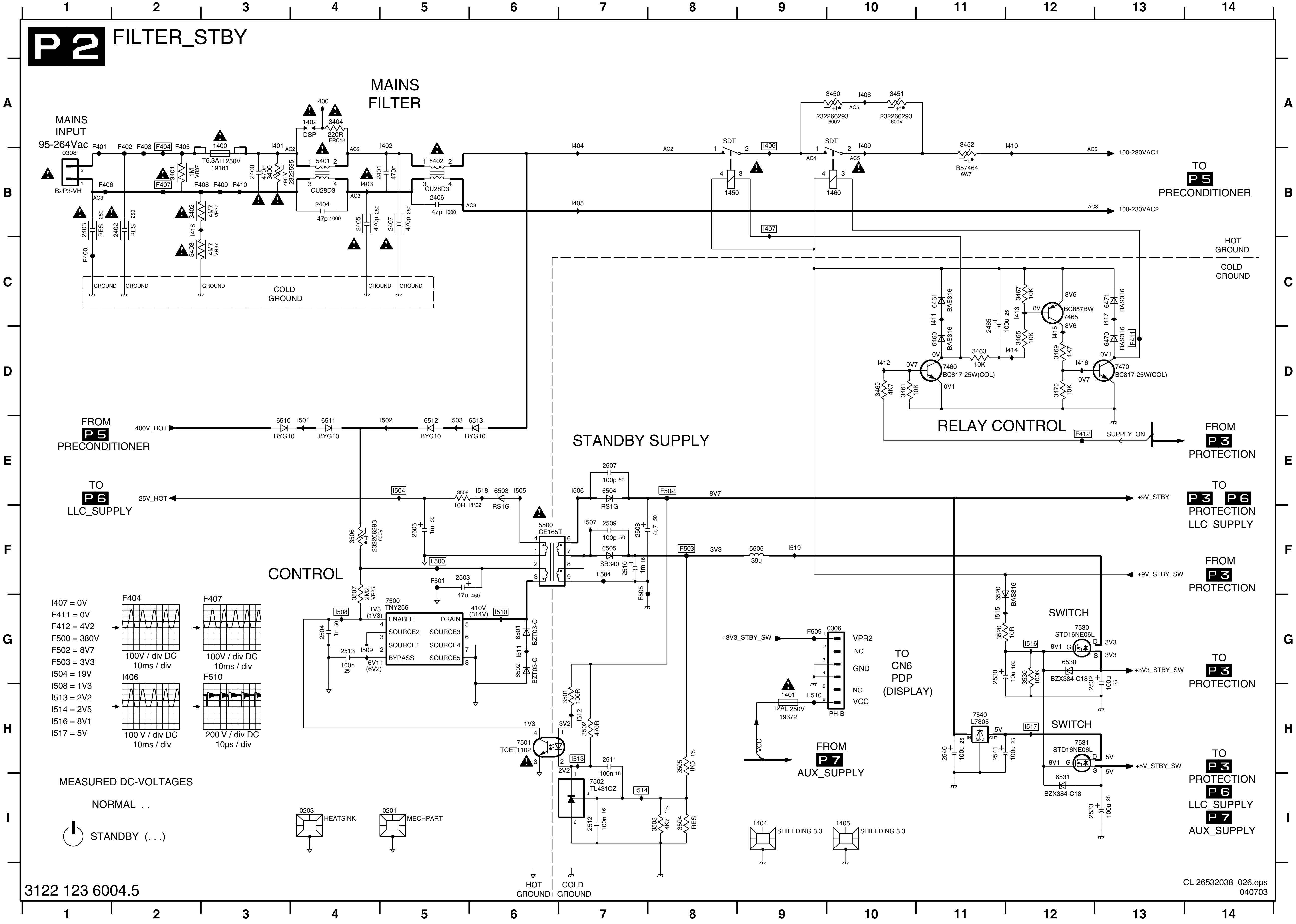
CL 26532100_011.eps
140703

2126	C1
3101	C1
3102	C1
3103	C1
3104	C1
3105	C1
3106	C1
3107	B1
3108	B1
3109	B1
3120	C1
3121	C1
3122	C1
3123	C1
3124	C1
3125	C1
3126	C1
3127	C1
5100	C1
6101	C1
6105	C1
7103	C1
7105	C1
7120	C1

Power Supply Panel (FM23 AC): Function Blocks and Connection Diagram


P 1
SUPPLY (FUNCTION BLOCKS AND DIAGRAM CONNECTIONS)
100-230VAC1
100-230VAC2
+5V_STBY_SW
+9V_STBY
+9V_STBY_SW
+3V3_STBY_SW
25V_HOT
400V_HOT
0308
MAINS_NEUTRAL 1
95-264Vac
MAINS_LIVE 2
SUPPLY_ON
0306
VPR2 1
NC
GND
GND
NC
VCC 6
VCC
DIAGRAM P 2
FILTER_STBY
GND
GNDHOT
SW25V_HOT
DIAGRAM P 5
PRECONDITIONER
+3V3_OVP
+8V6
70-90V
+3V3
VS
0307
VSK 1
SENCE_GND
VAK
GND
IAK 5
GND
VRS
GND
VRA
GND 10
PFCGO
GND
VCEGO
GND
VSAGO 15
GND
NC
NC
NC
NC 20
0319
+9V_STBY 1
+9V_STBY_SW
+8V6
+5V_STBY_SW 5
+3V3_STBY_SW
SCL_1
SDA_1
GND
POWER_OK
NC 10
STANDBY
FAN_SP_1
FAN_SP_2 13
VRS
DC_PROT
LATCH
VRA
VSA_CONTROL
IAKS
VA
VCC
VCC_GO
POK
DIAGRAM P 3
PROTECTION
FAN_SP1
FAN_SP2
GND
+18V
77-100V
VB
0302
VSND_NEG 1
VSND_NEG
GND_SND
GND_SND
VSND_POS 5
VSND_POS
GND_SND
+9V_STBY
DC_PROT 9
DIAGRAM P 6
LLC_SUPPLY
GNDHOT
GND
+12V
0389
FAN_SUPPLY_2 1
GND
FAN_SUPPLY_1 3
0390
FAN_SUPPLY_2 1
GND
FAN_SUPPLY_1 3
DIAGRAM P 4
FANCONTROL
GND
0342
0352
VA 1 1
NC
NC
GND
GND
NC
VCC 7 7
0323
VA 1
NC
VCC
GND
GND 5
GND
NC
VS
VS
VS 10
0333
1
5 GND
NC
9 VS
0305
+5 1
GND
GND
GND
GND
GND 6
GND
+3V3
+3V3
+3V3
+3V3
+3V3 12
0392
Vs Va alignment 1
4
DIAGRAM P 7
AUX_SUPPLY
GND
3122 123 6004.5
CL 26532038_025.eps
030703

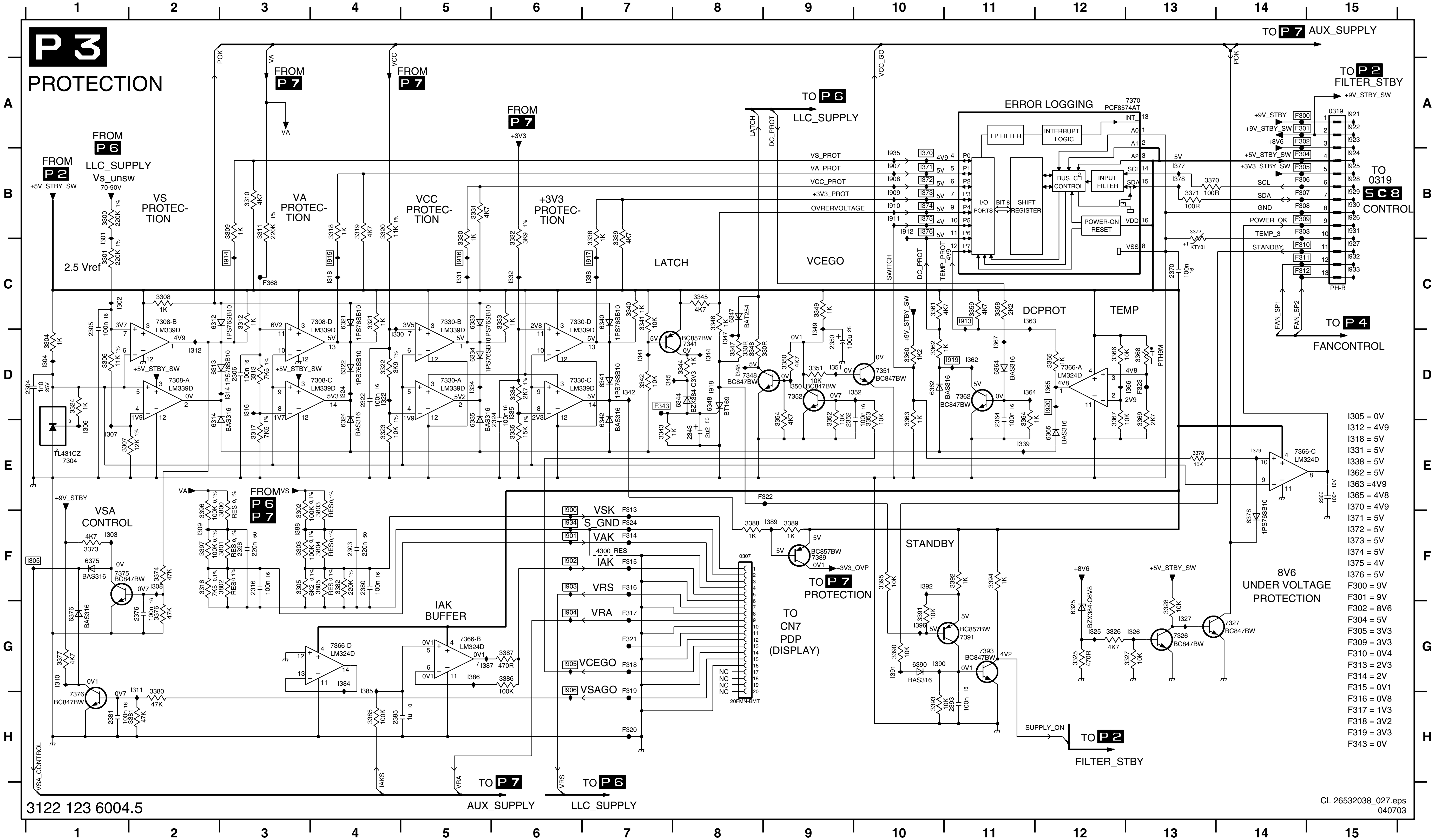
Power Supply Panel (FM23 AC): Mains Filter and Standby Supply


P2 FILTER_STBY
MAINS FILTER
MAINS INPUT 95-264Vac
0308
B2P3-VH
F401
F402
F403
F404
F405
F406
F407
F408
F409
F410
F400
1400
T6.3AH 250V
19181
1402
DSP
I400
3404
220R
ERC12
I401
AC2
5401
CU28D3
I402
5402
CU28D3
2406
47p 1000
2404
47p 1000
I403
AC3
2400
470n
3400
495 V
2322595
2401
470n
2405
470p 250
2407
470p 250
3401
1M
VR37
3402
4M7
VR37
I418
3403
4M7
VR37
2403
RES
250
2402
RES
250
GROUND
COLD GROUND
I404
I405
AC2
AC3
SDT
1450
I406
I407
AC4
AC5
SDT
1460
3450
232266293
600V
I408
3451
232266293
600V
I409
3452
B57464
6W7
I410
100-230VAC1
100-230VAC2
TO
P5
PRECONDITIONER
HOT GROUND
COLD GROUND
6461
BAS316
I411
6460
BAS316
2465
100u 25
3467
10K
I413
3465
10K
I414
3463
10K
8V6
8V
BC857BW
7465
I415
3469
4K7
I416
6471
BAS316
I417
6470
BAS316
F411
I412
0V7
0V
7460
BC817-25W(COL)
0V1
3460
4K7
3461
10K
0V1
7470
BC817-25W(COL)
0V7
3470
10K
RELAY CONTROL
F412
SUPPLY_ON
FROM
P3
PROTECTION
FROM
P5
PRECONDITIONER
400V_HOT
6510
BYG10
I501
6511
BYG10
I502
6512
BYG10
I503
6513
BYG10
STANDBY SUPPLY
TO
P6
LLC_SUPPLY
25V_HOT
I504
3508
10R PR02
I518
6503
RS1G
I505
2505
1m 35
3506
232266293
600V
F500
F501
2503
47u 450
5500
CE165T
I506
2507
100p 50
6504
RS1G
F502
8V7
+9V_STBY
TO
P3 P6
PROTECTION
LLC_SUPPLY
I507
2509
100p 50
6505
SB340
2508
4u7 50
2510
1m 16
F504
F505
F503
3V3
5505
39u
I519
+9V_STBY_SW
FROM
P3
PROTECTION
CONTROL
3507
2M2
VR25
7500
TNY256
ENABLE
DRAIN
SOURCE2
SOURCE3
SOURCE1
SOURCE4
BYPASS
SOURCE5
1V3
(1V3)
410V
(314V)
I508
I510
2504
1n 50
2513
100n 25
I509
6V11
(6V2)
6501
BZT03-C
I511
6502
BZT03-C
3501
100R
I512
3502
470R
1V3
3V2
7501
TCET1102
2V2
I513
2511
100n 16
7502
TL431CZ
I514
2512
100n 16
3503
4K7 1%
3504
RES
3505
1K5 1%
+3V3_STBY_SW
F509
0306
VPR2
NC
GND
NC
VCC
PH-B
TO
CN6
PDP
(DISPLAY)
1401
T2AL 250V
19372
F510
VCC
FROM
P7
AUX_SUPPLY
6520
BAS316
I515
3520
10R
SWITCH
7530
STD16NE06L
I516
8V1
3V3
3V3
6530
BZX384-C18
2530
10u 100
3530
100K
2532
100u 25
+3V3_STBY_SW
TO
P3
PROTECTION
7540
L7805
5V
I517
SWITCH
7531
STD16NE06L
8V1
5V
5V
6531
BZX384-C18
2540
100u 25
2541
100u 25
2533
100u 25
+5V_STBY_SW
TO
P3
PROTECTION
P6
LLC_SUPPLY
P7
AUX_SUPPLY
I407 = 0V
F411 = 0V
F412 = 4V2
F500 = 380V
F502 = 8V7
F503 = 3V3
I504 = 19V
I508 = 1V3
I513 = 2V2
I514 = 2V5
I516 = 8V1
I517 = 5V
F404
100V / div DC
10ms / div
F407
100V / div DC
10ms / div
I406
100 V / div DC
10ms / div
F510
200 V / div DC
10µs / div
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
0203
HEATSINK
0201
MECHPART
1404
SHIELDING 3.3
1405
SHIELDING 3.3
HOT GROUND
COLD GROUND
3122 123 6004.5
CL 26532038_026.eps
040703
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I

0201	I5
0203	I4
0306	G10
0308	B1
1400	B3
1401	H9
1402	A4
1404	I9
1405	I10
1450	B8
1460	B10
2400	B3
2401	B5
2402	B2
2403	B1
2404	B4
2405	B4
2406	B5
2407	B5
2465	C11
2503	F5
2504	G4
2505	F5
2507	E7
2508	F7
2509	F7
2510	F7
2511	H7
2512	I7
2513	G4
2530	G11
2532	G12
2533	I12
2540	H11
2541	H11
3400	B3
3401	B2
3402	B2
3403	C2
3404	A4
3450	A10
3451	A10
3452	A11
3460	D10
3461	D10
3463	D11
3465	D12
3467	C12
3469	D12
3470	D12
3501	H7
3502	H7
3503	I8
3504	I8
3505	H8
3506	F4
3507	F4
3508	E5
3520	G11
3530	G12
5401	B4
5402	B5
5500	F6
5505	F9
6460	D11
6461	C11
6470	D13
6471	C13
6501	G6
6502	G6
6503	E6
6504	E7
6505	F7
6510	E3
6511	E4
6512	E5
6513	E6
6520	F11
6530	G12
6531	I12
7460	D11
7465	C12
7470	D13
7500	G5
7501	H6
7502	I7
7530	G12
7531	H12
7540	H11
F400	C1
F401	B1
F402	B2
F403	B2
F404	B2
F405	B2
F406	B1
F407	B2
F408	B3
F409	B3
F410	B3
F411	D13
F412	E12
F500	F5
F501	F5
F502	E8
F503	F8
F504	F7
F505	F7
F509	G9
F510	H9
I400	A4
I401	A3
I402	A5
I403	B4
I404	A7
I405	B7
I406	A9
I407	B9
I408	A10
I409	A10
I410	A12
I411	C11
I412	D10
I413	C12
I414	D12
I415	D12
I416	D12
I417	C13
I418	B2
I501	E4
I502	E5
I503	E5
I504	E5
I505	E6
I506	E7
I507	F7
I508	G4
I509	G4
I510	G6
I511	G6
I512	H7
I513	H7
I514	I7
I515	G11
I516	G12
I517	H12
I518	E6
I519	F9

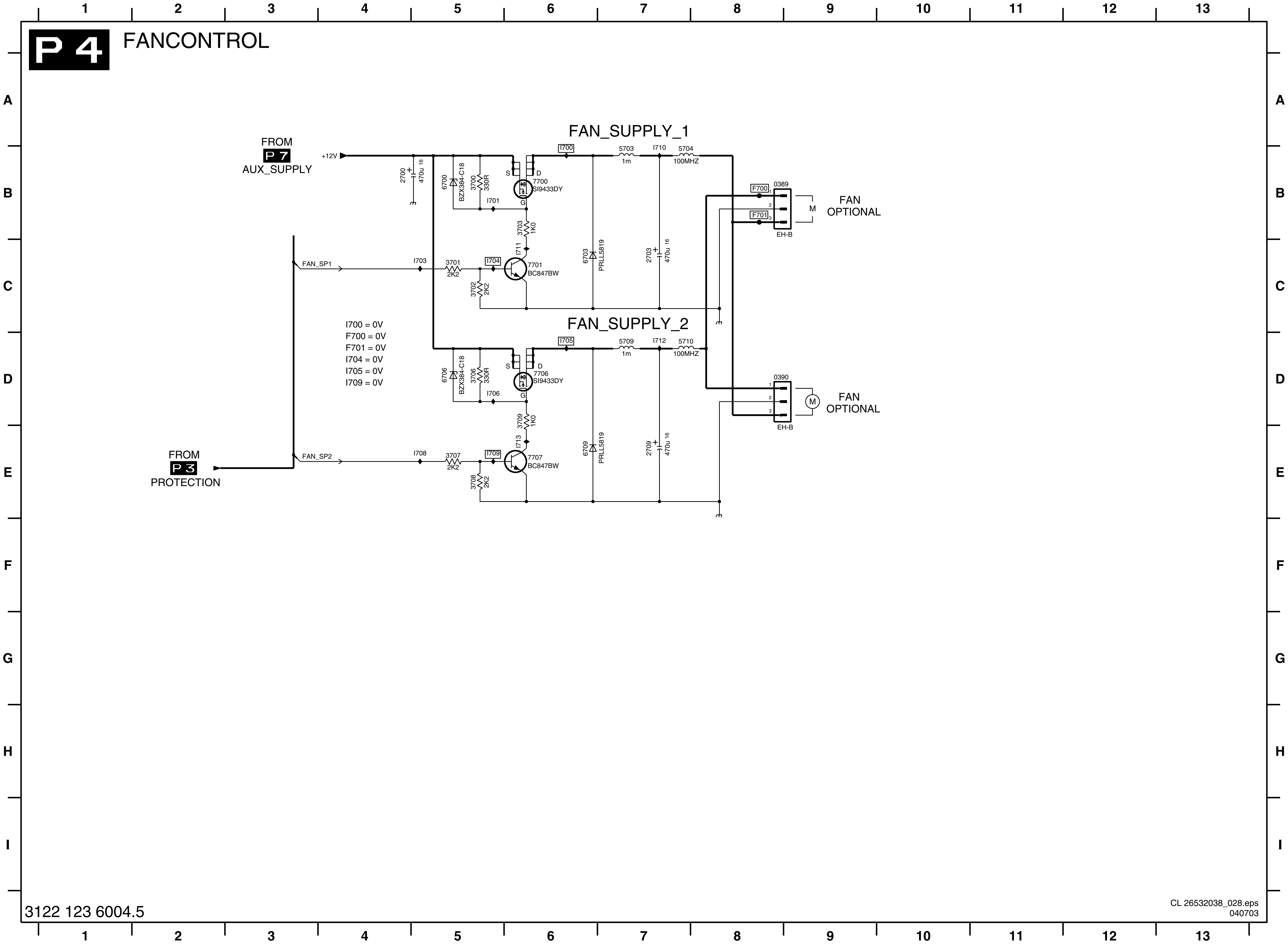
Power Supply Panel (FM23 AC): Protections

0307	F8
0319	A15
2303	F4
2304	D1
2305	C1
2306	D3
2316	F3
2322	D4
2324	D6
2343	E8
2350	D9
2352	D9
2364	D11
2366	E15
2370	C13
2376	G2
2380	F4
2381	H1
2385	H4
2393	H11
2396	F3
3300	B1
3301	C1
3302	F3
3303	F3
3304	D1
3305	F3
3306	D1
3307	E1
3308	C2
3309	B3
3310	B3
3311	B3
3312	C3
3313	D3
3316	F2
3317	E3
3318	B4
3319	B4
3320	B4
3321	C4
3322	D4
3323	E4
3324	D1
3325	G12
3326	G12
3327	G13
3328	G13
3330	B5
3331	B5
3332	B6
3333	C6
3334	D6
3335	E6
3338	B7
3339	B7
3340	C7
3341	C7
3342	D7
3343	E7
3344	D8
3345	C8
3346	C8
3347	D8
3348	D8
3349	C9
3350	D9
3351	D9
3352	D9
3353	D10
3354	D9
3358	C11
3359	C11
3360	D10
3361	C10
3362	D10
3363	D10
3364	D11
3365	D12
3366	D12
3367	D12
3368	D13
3369	D13
3370	B13
3371	B13
3372	B13
3373	F1
3374	F2
3376	G2
3377	G1
3378	E13
3380	H2
3381	H2
3382	F4
3385	H4
3386	G6
3387	G6
3388	F8
3389	F9
3390	G10
3391	G10
3392	F11
3393	H10
3394	F11
3395	F10
3396	F2
3397	F2
3800	E3
3801	F3
3802	F3
3803	E4
3804	F4
3805	F4
4300	F7
6312	C2
6313	D2
6314	E2
6321	C4
6322	D4
6324	E4
6325	G12
6333	C5
6334	D5
6335	E5
6340	C7
6341	D7
6342	E7
6344	D8
6347	C8
6348	D8
6362	D10
6364	D11
6365	E12
6375	F1
6376	G1
6378	F14
6390	G10
7304	E1
7308-A	D2
7308-B	C2
7308-C	D4
7308-D	C4
7326	G13
7327	G14
7330-A	D5
7330-B	C5
7330-C	D6
7330-D	C6
7341	D8
7348	D8
7351	D10
7352	D9
7362	D11
7366-A	D12
7366-B	G5
7366-C	E14
7366-D	G4
7370	A13
7375	F2
7376	H1
7389	F9
7391	G11
7393	G11
F300	A14
F301	A14
F302	A14
F303	B14
F304	B14
F305	B14
F306	B14
F307	B14
F308	B14
F309	B14
F310	C14
F311	C14
F312	C14
F313	F7
F314	F7
F315	F7
F316	F7
F317	G7
F318	G7
F319	H7
F320	H7
F321	G7
F322	E9
F323	D13
F324	F7
F343	D7
F368	C3
I301	B1
I302	C1
I303	F1
I304	D1
I305	F1
I306	E1
I307	E1
I308	F2
I309	F2
I310	G1
I311	G2
I312	D2
I314	D3
I316	D3
I318	C4
I322	D4
I324	D4
I325	G12
I326	G13
I327	G13
I330	D4
I331	C5
I332	C6
I334	D5
I335	D6
I338	C7
I339	E11
I341	D7
I342	D7
I344	D8
I345	D7
I347	D8
I348	D8
I349	C9
I350	D9
I351	D9
I352	D10
I362	D11
I363	C11
I364	D11
I365	D12
I366	D13
I367	D11
I370	B10
I371	B10
I372	B10
I373	B10
I374	B10
I375	B10
I376	B10
I377	B13
I378	B13
I379	E14
I384	G4
I385	G4
I386	G5
I387	G5
I388	F3
I389	F9
I390	G10
I391	G10
I392	F10
I396	G10
I900	E6
I901	F6
I902	F6
I903	F6
I904	G6
I905	G6
I906	G6
I907	B10
I908	B10
I909	B10
I910	B10
I911	B10
I912	B10
I913	C11
I914	C3
I915	C4
I916	C5
I917	C7
I918	D8
I919	D11
I920	D12
I921	A15
I922	A15
I923	A15
I924	B15
I925	B15
I926	B15
I927	C15
I928	B15
I929	B15
I930	B15
I931	B15
I932	C15
I933	C15
I934	F6
I935	B10



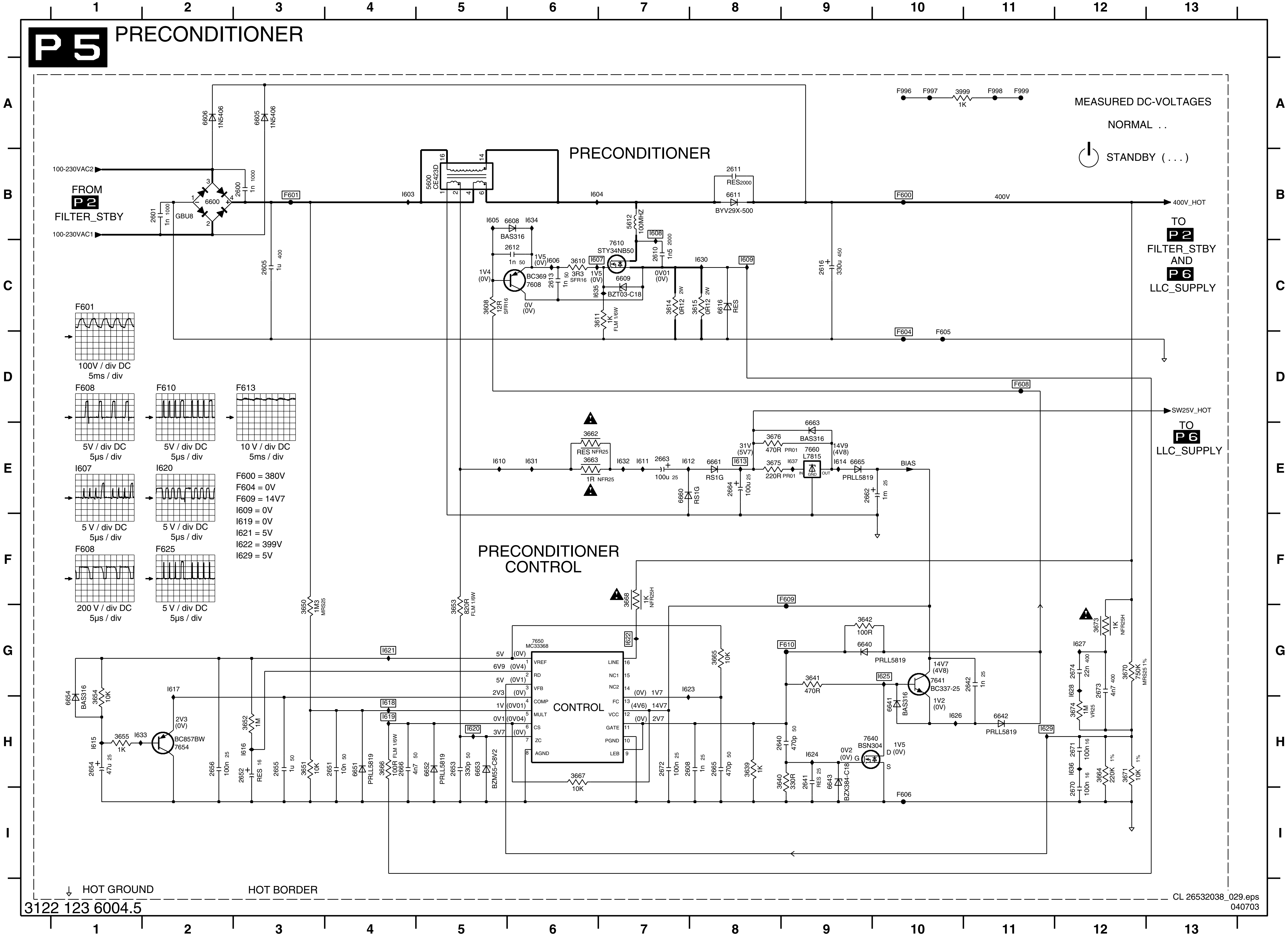
P 3
PROTECTION
FROM P 2 +5V_STBY_SW
FROM P 6 LLC_SUPPLY Vs_unsw 70-90V
2.5 Vref
VS PROTEC-TION
VA PROTEC-TION
VCC PROTEC-TION
+3V3 PROTEC-TION
FROM P 7 VA
FROM P 7 VCC
FROM P 7 +3V3
POK
LATCH
VCEGO
TO P 6 LLC_SUPPLY
TO P 7 AUX_SUPPLY
ERROR LOGGING
7370 PCF8574AT
LP FILTER
INTERRUPT LOGIC
I/O PORTS
BIT 8
SHIFT REGISTER
BUS CONTROL
INPUT FILTER
POWER-ON RESET
VS_PROT
VA_PROT
VCC_PROT
+3V3_PROT
OVREVOLTAGE
SWITCH
DC_PROT
TEMP_PROT
VCC_GO
DCPROT
TEMP
TO P 2 FILTER_STBY
TO 0319 5C8 CONTROL
+9V_STBY
+9V_STBY_SW
+8V6
+5V_STBY_SW
+3V3_STBY_SW
SCL
SDA
GND
POWER_OK
TEMP_3
STANDBY
FAN_SP1
FAN_SP2
TO P 4 FANCONTROL
PH-B
VSA CONTROL
+9V_STBY
FROM P 6 P 7 VS
VSK
S_GND
VAK
IAK
VRS
VRA
VCEGO
VSAGO
4300 RES
IAK BUFFER
TO CN7 PDP (DISPLAY)
0307
20FMN-BMT
NC
TO P 7 PROTECTION
+3V3_OVP
STANDBY
SUPPLY_ON
TO P 2 FILTER_STBY
8V6 UNDER VOLTAGE PROTECTION
VSA_CONTROL
IAKS
VRA
VRS
TO P 7 AUX_SUPPLY
TO P 6 LLC_SUPPLY
7308-A LM339D
7308-B LM339D
7308-C LM339D
7308-D LM339D
7330-A LM339D
7330-B LM339D
7330-C LM339D
7330-D LM339D
7366-A LM324D
7366-B LM324D
7366-C LM324D
7366-D LM324D
TL431CZ 7304
BC857BW 7341
BC847BW 7348
BC847BW 7352
BC847BW 7351
BC847BW 7362
BC857BW 7389
BC847BW 7375
BC847BW 7376
BC857BW 7391
BC847BW 7393
BC847BW 7326
BC847BW 7327
PTH9M
KTY81
BZX384-C3V3
BZX384-C6V8
BAT254
BT169
1PS76SB10
BAS316
I305 = 0V
I312 = 4V9
I318 = 5V
I331 = 5V
I338 = 5V
I362 = 5V
I363 =4V9
I365 = 4V8
I370 = 4V9
I371 = 5V
I372 = 5V
I373 = 5V
I374 = 5V
I375 = 4V
I376 = 5V
F300 = 9V
F301 = 9V
F302 = 8V6
F304 = 5V
F305 = 3V3
F309 = 3V3
F310 = 0V4
F313 = 2V3
F314 = 2V
F315 = 0V1
F316 = 0V8
F317 = 1V3
F318 = 3V2
F319 = 3V3
F343 = 0V
3122 123 6004.5
CL 26532038_027.eps 040703
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H

Power Supply Panel (FM23 AC): Fan Control


P 4
FANCONTROL
FROM
P 7
AUX_SUPPLY
+12V
2700
470u 16
6700
BZX384-C18
3700
330R
S
D
7700
SI9433DY
G
I701
3703
1K0
I711
FAN_SUPPLY_1
I700
5703
1m
I710
5704
100MHZ
6703
PRLL5819
2703
470u 16
F700
F701
0389
EH-B
M
FAN
OPTIONAL
FAN_SP1
I703
3701
2K2
I704
7701
BC847BW
3702
2K2
I700 = 0V
F700 = 0V
F701 = 0V
I704 = 0V
I705 = 0V
I709 = 0V
FAN_SUPPLY_2
I705
5709
1m
I712
5710
100MHZ
6706
BZX384-C18
3706
330R
7706
SI9433DY
I706
3709
1K0
I713
0390
EH-B
M
FAN
OPTIONAL
FROM
P 3
PROTECTION
FAN_SP2
I708
3707
2K2
I709
7707
BC847BW
3708
2K2
6709
PRLL5819
2709
470u 16
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
3122 123 6004.5
CL 26532038_028.eps
040703

0389	B8
0390	D8
2700	B4
2703	C7
2709	E7
3700	B5
3701	C5
3702	C5
3703	B6
3706	D5
3707	E5
3708	E5
3709	D6
5703	B7
5704	B7
5709	D7
5710	D7
6700	B5
6703	C6
6706	D5
6709	E6
7700	B6
7701	C6
7706	D6
7707	E6
F700	B8
F701	B8
I700	B6
I701	B5
I703	C5
I704	C5
I705	D6
I706	D5
I708	E5
I709	E5
I710	B7
I711	C6
I712	D7
I713	E6

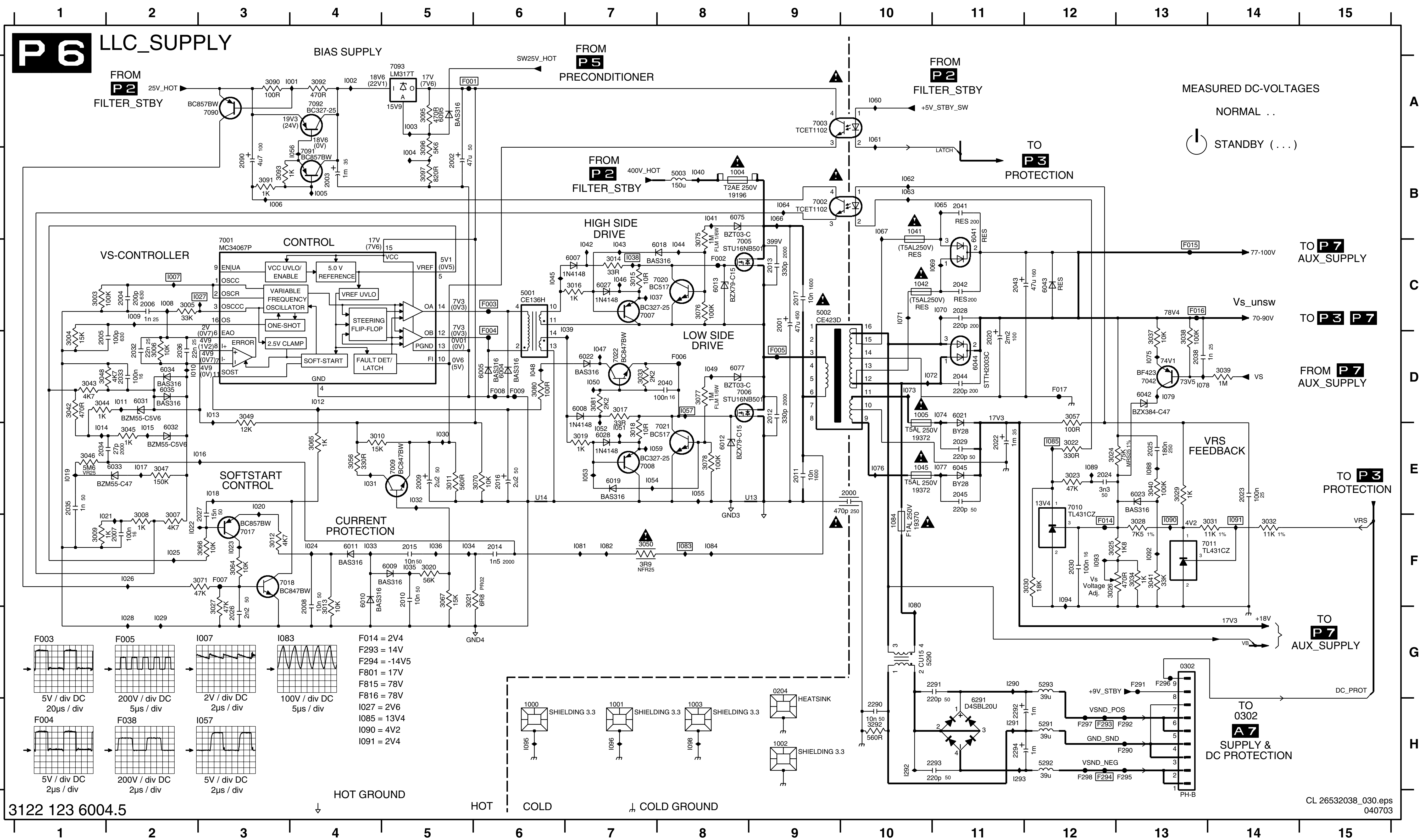
Power Supply Panel (FM23 AC): Pre-Conditioner


P 5
PRECONDITIONER
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
100-230VAC2
FROM
P 2
FILTER_STBY
100-230VAC1
6606 1N5406
6605 1N5406
6600 GBU8
2600 1n 1000
2601 1n 1000
F601
I603
5600 CE423D
PRECONDITIONER
I604
2611 RES 2000
6611 BYV29X-500
F600
400V
400V_HOT
TO
P 2
FILTER_STBY
AND
P 6
LLC_SUPPLY
F996 F997 3999 1K F998 F999
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
I605 6608 I634 BAS316
2612 1n 50
1V5 (0V)
I606
3610 3R3 SFR16
I607
1V5 (0V)
7610 STY34NB50
5612 100MHZ
I608
2610 1n5 2000
I630
I609
1V4 (0V)
BC369 7608
2613 1n 50
I635
6609 BZT03-C18
0V01 (0V)
0V (0V)
3608 12R SFR16
3611 1K FLM 1/6W
3614 0R12 2W
3615 0R12 2W
6616 RES
2605 1u 400
2616 330u 450
F604
F605
F608
F601
100V / div DC
5ms / div
F608
5V / div DC
5µs / div
F610
5V / div DC
5µs / div
F613
10 V / div DC
5ms / div
I607
5 V / div DC
5µs / div
I620
5 V / div DC
5µs / div
F608
200 V / div DC
5µs / div
F625
5 V / div DC
5µs / div
F600 = 380V
F604 = 0V
F609 = 14V7
I609 = 0V
I619 = 0V
I621 = 5V
I622 = 399V
I629 = 5V
SW25V_HOT
TO
P 6
LLC_SUPPLY
3662 RES NFR25
3663 1R NFR25
I610 I631 I632 I611
2663 100u 25
I612
6660 RS1G
6661 RS1G
I613
2664 100u 25
31V (5V7)
3676 470R PR01
3675 220R PR01
I637
6663 BAS316
7660 L7815
IN GND OUT
14V9 (4V8)
I614 6665 PRLL5819
2662 1m 25
BIAS
PRECONDITIONER
CONTROL
3668 1K NFR25H
F609
3650 1M3 MRS25
3653 820R FLM 1/6W
7650 MC33368
CONTROL
VREF RD VFB COMP MULT CS ZC AGND
LINE NC1 NC2 FC VCC GATE PGND LEB
I622
I621
5V (0V)
6V9 (0V4)
5V (0V1)
2V3 (0V)
1V (0V01)
0V1 (0V04)
3V7 (0V)
(0V) 1V7
(4V6) 14V7
(0V) 2V7
I623
3665 10K
I618
I619
I620
I617
6654 BAS316
3654 10K
2V3 (0V)
3655 1K
I633
BC857BW 7654
I615
2654 47u 25
2656 100n 25
I616
3652 1M
2652 RES 16
2655 1u 50
3651 10K
2651 10n 50
6651 PRLL5819
3666 100R FLM 1/6W
2666 4n7 50
6652 PRLL5819
2653 330p 50
6653 BZM55-C8V2
3667 10K
2672 100n 25
2608 1n 25
2665 470p 50
3639 1K
F610
3642 100R
6640 PRLL5819
14V7 (4V8)
3641 470R
I625
7641 BC337-25
2642 1n 25
1V2 (0V)
6641 BAS316
I626
6642 PRLL5819
I629
2640 470p 50
I624
0V2 (0V)
7640 BSN304
1V5 D (0V)
G S
3640 330R
2641 RES 25
6643 BZX384-C18
F606
I627
2674 22n 400
2673 4n7 400
I628
3674 1M VR25
3673 1K NFR25H
3670 750K MRS25 1%
I636
2671 100n 16
2670 100n 16
3664 220K 1%
3671 10K 1%
HOT GROUND
HOT BORDER
3122 123 6004.5
CL 26532038_029.eps
040703

2600	B3
2601	B2
2605	C3
2608	H8
2610	C7
2611	B8
2612	C6
2613	C6
2616	C9
2640	H9
2641	H9
2642	G11
2651	H4
2652	H3
2653	H5
2654	H1
2655	H3
2656	H2
2662	E9
2663	E7
2664	E8
2665	H8
2666	H4
2670	I12
2671	H12
2672	H7
2673	G12
2674	G12
3608	C5
3610	C6
3611	C7
3614	C7
3615	C8
3639	H8
3640	H9
3641	G9
3642	G9
3650	G3
3651	H3
3652	H3
3653	G5
3654	H1
3655	H1
3662	E6
3663	E6
3664	H12
3665	G8
3666	H4
3667	H6
3668	F7
3670	G12
3671	H12
3673	G12
3674	H12
3675	E8
3676	E8
3999	A10
5600	B5
5612	B7
6600	B2
6605	A3
6606	A2
6608	B6
6609	C7
6611	B8
6616	C8
6640	G9
6641	H10
6642	H11
6643	H9
6651	H4
6652	H5
6653	H5
6654	H1
6660	E7
6661	E8
6663	E9
6665	E9
7608	C6
7610	C7
7640	H9
7641	G10
7650	G6
7654	H2
7660	E9
F600	B10
F601	B3
F604	D10
F605	D10
F606	I10
F608	D11
F609	F9
F610	G9
F996	A10
F997	A10
F998	A11
F999	A11
I603	B4
I604	B6
I605	B5
I606	C6
I607	C6
I608	B7
I609	C8
I610	E5
I611	E7
I612	E7
I613	E8
I614	E9
I615	H1
I616	H3
I617	G2
I618	H4
I619	H4
I620	H5
I621	G4
I622	G7
I623	G7
I624	H9
I625	G10
I626	H10
I627	G12
I628	G12
I629	H11
I630	C8
I631	E6
I632	E7
I633	H1
I634	B6
I635	C6
I636	H12
I637	E9

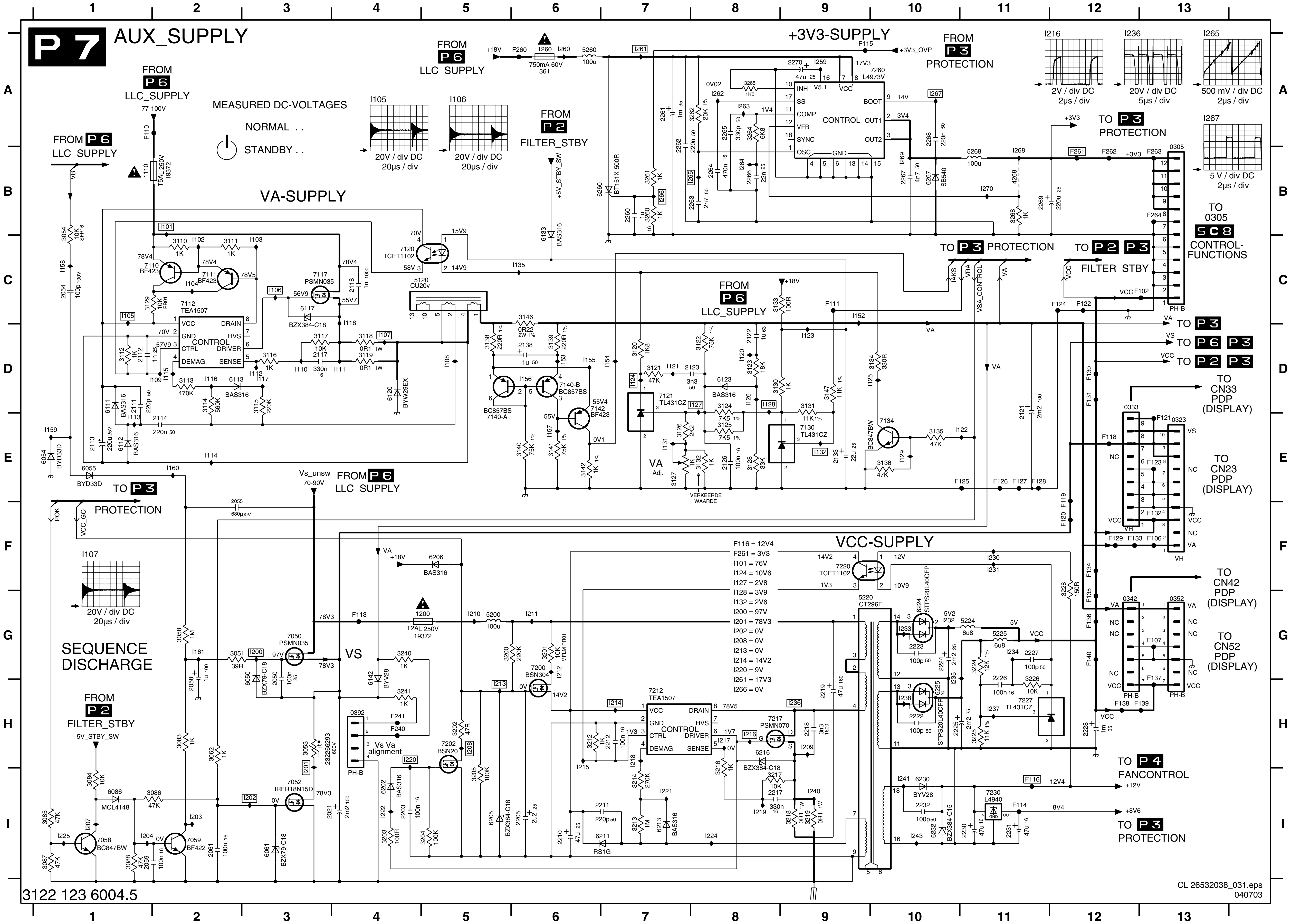
Power Supply Panel (FM23 AC): LLC Supply

U13	E9
U14	E6
0204	G9
0302	G13
1000	H6
1001	H7
1002	H9
1003	H8
1004	B8
1005	D10
1041	B10
1042	C10
1045	E10
1084	F10
2000	E10
2001	C9
2002	B5
2003	B4
2004	C2
2005	D1
2006	C2
2007	F2
2008	G4
2009	E5
2010	F5
2011	E9
2012	D9
2013	C9
2014	F6
2015	F5
2016	E6
2017	C9
2020	D11
2022	E11
2023	E14
2024	E12
2025	E13
2026	G3
2027	F3
2028	C11
2029	E11
2030	F12
2032	D2
2033	D2
2034	E1
2035	E1
2036	D2
2038	D13
2040	D8
2041	B11
2042	C11
2043	C11
2044	D11
2045	E11
2090	B3
2290	H10
2291	G11
2292	H11
2293	H11
2294	H11
3003	C1
3004	D1
3005	C2
3006	D2
3007	F2
3008	F2
3009	F1
3010	E4
3011	E5
3012	F3
3013	G4
3014	C7
3015	C7
3016	C7
3017	D7
3018	E7
3019	E7
3020	F5
3021	F5
3022	E12
3023	E12
3024	E12
3025	F12
3026	F12
3027	G3
3028	F13
3029	E13
3030	F12
3031	F14
3032	F14
3033	D7
3034	F13
3037	D13
3038	D13
3039	D14
3040	E13
3041	F13
3042	D1
3043	D1
3044	D1
3045	E2
3046	E1
3047	E2
3048	D1
3049	D3
3050	F7
3056	E4
3057	D12
3064	F3
3065	E4
3066	F3
3067	F5
3070	E6
3071	F3
3075	C8
3076	C8
3077	D8
3078	E8
3080	D6
3081	D7
3090	A3
3091	B3
3092	A4
3093	B3
3095	A5
3096	B5
3097	B5
3292	H10
5001	C6
5002	C9
5003	B8
5290	G10
5291	H12
5292	H12
5293	G12
6004	D6
6005	D6
6007	C7
6008	D7
6009	F5
6010	F4
6011	F4
6012	E8
6013	C8
6018	C8
6019	E7
6021	D11
6022	D7
6023	E13
6027	C7
6028	E7
6031	D2
6032	E2
6033	E2
6034	D2
6035	D2
6041	C11
6042	D13
6043	C12
6044	D11
6045	E11
6075	B8
6077	D8
6095	A5
6291	H11
7001	C3
7002	B9
7003	A9
7005	C8
7006	D8
7007	C7
7008	E7
7009	E5
7010	E12
7011	F13
7017	F3
7018	F3
7020	C8
7021	E8
7022	D7
7042	D13
7090	A3
7091	B4
7092	A4
7093	A5
F001	A5
F002	C8
F003	C6
F004	D6
F005	D9
F006	D8
F007	F3
F008	D6
F009	D6
F014	F12
F015	C13
F016	C13
F017	D12
F290	H13
F291	G13
F292	H13
F293	H12
F294	H12
F295	H13
F296	G13
F297	H12
F298	H12
I001	A4
I002	A4
I003	A5
I004	B5
I005	B4
I006	B3
I007	C2
I008	C2
I009	C2
I010	D2
I011	D2
I012	D4
I013	D3
I014	E1
I015	E2
I016	E3
I017	E2
I018	E3
I019	E1
I020	E3
I021	F1
I022	F2
I023	F3
I024	F4
I025	F2
I026	F2
I027	C3
I028	G2
I029	G2
I030	E5
I031	E4
I032	E5
I033	F4
I034	F5
I035	F5
I036	F5
I037	C7
I038	C7
I039	C7
I040	B8
I041	B8
I042	C7
I043	C7
I044	C8
I045	C6
I046	C7
I047	D7
I048	D6
I049	D8
I050	D7
I051	E7
I052	E7
I053	E7
I054	E7
I055	E8
I056	B4
I057	D8
I059	E7
I060	A10
I061	A10
I062	B10
I063	B10
I064	B9
I065	B11
I066	B9
I067	B10
I069	C11
I070	C11
I071	C10
I072	D10
I073	D10
I074	D11
I075	D13
I076	E10
I077	E11
I078	D13
I079	D13
I080	F10
I081	F7
I082	F7
I083	F8
I084	F8
I085	E12
I088	E13
I089	E12
I090	F13
I091	F14
I092	F13
I093	F12
I094	F12
I095	H6
I096	H7
I098	H8
I290	G11
I291	H11
I292	H10
I293	H11



P 6 LLC_SUPPLY
BIAS SUPPLY
FROM P 2 FILTER_STBY
25V_HOT
BC857BW 7090
3090 100R
3092 470R
7092 BC327-25
7091 BC857BW
7093 LM317T
18V6 (22V1)
17V (7V6)
15V9
SW25V_HOT
FROM P 5 PRECONDITIONER
FROM P 2 FILTER_STBY
400V_HOT
5003 150u
1004 T2AE 250V 19196
HIGH SIDE DRIVE
LOW SIDE DRIVE
7005 STU16NB501
7006 STU16NB501
7020 BC517
7021 BC517
7007 BC327-25
7008 BC327-25
7022 BC847BW
5001 CE136H
5002 CE423D
7001 MC34067P
CONTROL
VS-CONTROLLER
VCC UVLO/ ENABLE
5.0 V REFERENCE
VARIABLE FREQUENCY OSCILLATOR
ONE-SHOT
VREF UVLO
STEERING FLIP-FLOP
ERROR
2.5V CLAMP
SOFT-START
FAULT DET/ LATCH
GND
SOFTSTART CONTROL
7017 BC857BW
7018 BC847BW
7009 BC847BW
CURRENT PROTECTION
3050 3R9 NFR25
GND3
GND4
7003 TCET1102
7002 TCET1102
FROM P 2 FILTER_STBY
+5V_STBY_SW
LATCH
TO P 3 PROTECTION
1041 (T5AL250V) RES
1042 (T5AL250V) RES
1005 T5AL 250V 19372
1045 T5AL 250V 19372
1084 F1AL 250V 19370
2020 STTH2003C
TO P 7 AUX_SUPPLY
77-100V
Vs_unsw
70-90V
TO P 3 P 7
FROM P 7 AUX_SUPPLY
VS
BF423 7042
BZX384-C47
VRS FEEDBACK
7010 TL431CZ
7011 TL431CZ
Vs Voltage Adj.
TO P 3 PROTECTION
VRS
17V3
+18V
TO P 7 AUX_SUPPLY
DC_PROT
5290 CU15
6291 D4SBL20U
+9V_STBY
VSND_POS
GND_SND
VSND_NEG
0302
PH-B
TO 0302 A 7 SUPPLY & DC PROTECTION
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
1000 SHIELDING 3.3
1001 SHIELDING 3.3
1003 SHIELDING 3.3
0204 HEATSINK
1002 SHIELDING 3.3
F003
F005
I007
I083
5V / div DC 20µs / div
200V / div DC 5µs / div
2V / div DC 2µs / div
100V / div DC 5µs / div
F004
F038
I057
5V / div DC 2µs / div
200V / div DC 2µs / div
5V / div DC 2µs / div
F014 = 2V4
F293 = 14V
F294 = -14V5
F801 = 17V
F815 = 78V
F816 = 78V
I027 = 2V6
I085 = 13V4
I090 = 4V2
I091 = 2V4
HOT GROUND
HOT
COLD
COLD GROUND
3122 123 6004.5
CL 26532038_030.eps 040703

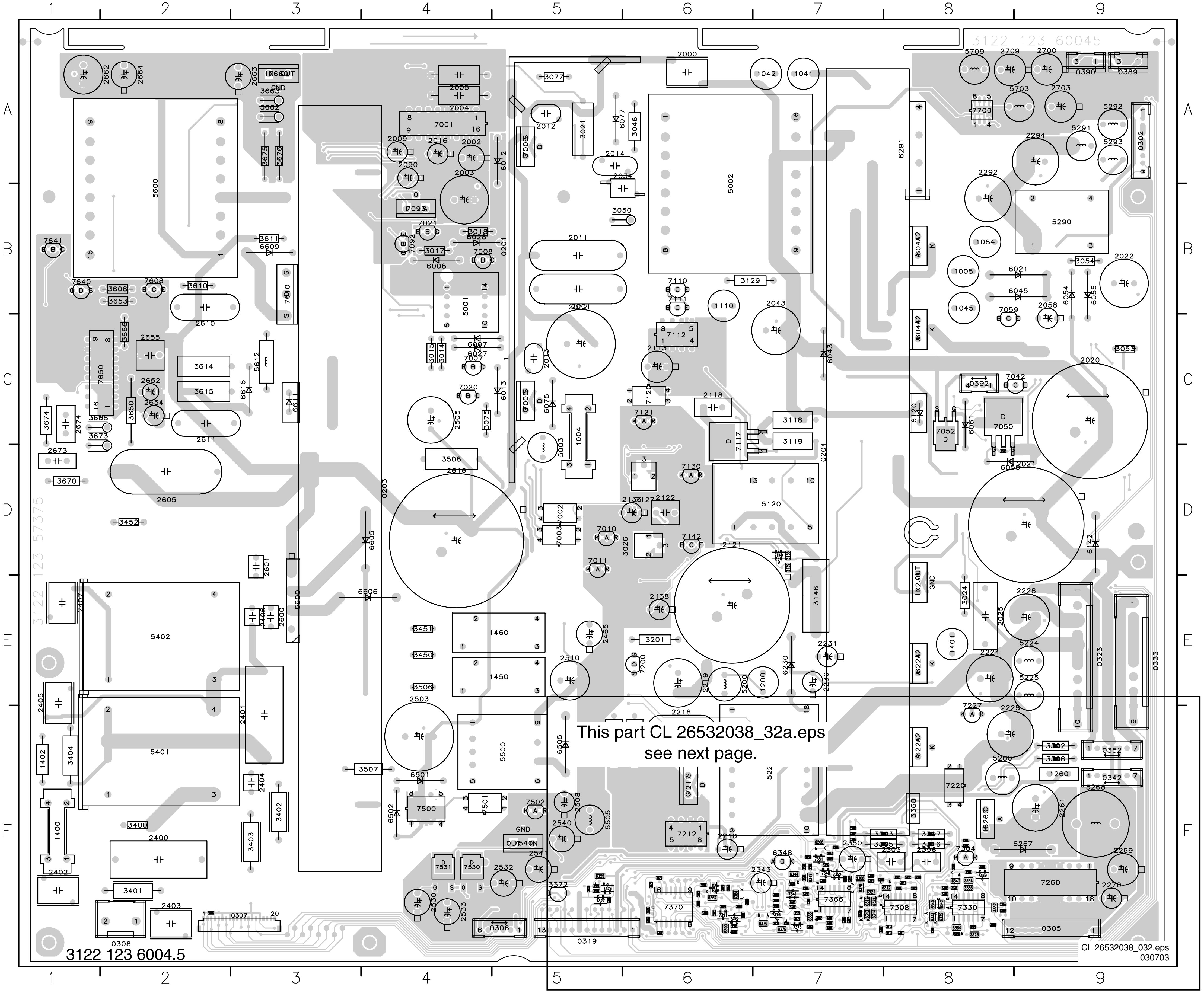
Power Supply Panel (FM23 AC): Aux Supply


P7 AUX_SUPPLY
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
FROM P6 LLC_SUPPLY
77-100V
FROM P6 LLC_SUPPLY
VB
MEASURED DC-VOLTAGES
NORMAL ..
STANDBY ..
I105
20V / div DC
20µs / div
I106
20V / div DC
20µs / div
FROM P6 LLC_SUPPLY
+18V
F260
1260
750mA 60V
361
I260
5260
100u
FROM P2 FILTER_STBY
+5V_STBY_SW
6133
BAS316
+3V3-SUPPLY
F115
+3V3_OVP
FROM P3 PROTECTION
7260
L4973V
INH
SS
COMP
VFB
SYNC
OSC
V5.1
VCC
BOOT
CONTROL
OUT1
OUT2
GND
17V3
14V
3V4
0V02
1V4
I216
2V / div DC
2µs / div
I236
20V / div DC
5µs / div
I265
500 mV / div DC
2µs / div
I267
5 V / div DC
2µs / div
+3V3
TO P3 PROTECTION
F261
F262
F263
0305
5268
100u
I268
4268
I270
3268
1K
2269
220u
6267
SB540
2267
4n7
6260
BT151X-500R
VA-SUPPLY
1110
T5AL 250V
19372
F110
I101
3110 1K
I102
3111 1K
I103
78V4
7110 BF423
7111 BF423
78V5
I104
7112 TEA1507
VCC
GND
CTRL
DRAIN
HVS
DRIVER
DEMAG
SENSE
CONTROL
70V
57V9
7117 PSMN035
56V9
55V7
6117 BZX384-C18
3117 10K
2117 330n
3118 0R1 1W
3119 0R1 1W
I107
6120 BYW29EX
7120 TCET1102
70V
58V
15V9
14V9
5120 CU20v
3146 0R22 2W
I135
TO P3 PROTECTION
TO P2 P3 FILTER_STBY
TO 0305 SC8 CONTROL-FUNCTIONS
AKS
VRA
VSA_CONTROL
VA
VCC
F102
F124
F122
PH-B
TO P3
VS TO P6 P3
VCC TO P2 P3
FROM P6 LLC_SUPPLY
+18V
F111
I152
VA
7121 TL431CZ
7130 TL431CZ
7134 BC847BW
7140-A BC857BS
7140-B BC857BS
7142 BF423
55V4
55V
0V1
VA Adj.
VERKEERDE WAARDE
F125 F126 F127 F128
TO CN33 PDP (DISPLAY)
0333
0323
TO CN23 PDP (DISPLAY)
TO CN42 PDP (DISPLAY)
0342
0352
TO CN52 PDP (DISPLAY)
6054 BYD33D
6055 BYD33D
TO P3 PROTECTION
POK
VCC_GO
Vs_unsw 70-90V
FROM P6 LLC_SUPPLY
2055 680p 500V
I107
20V / div DC
20µs / div
SEQUENCE DISCHARGE
FROM P2 FILTER_STBY
+5V_STBY_SW
7058 BC847BW
7059 BF422
6086 MCL4148
7050 PSMN035
97V
78V3
VS
7052 IRFR18N15D
6050 BZX79-C18
6061 BZX79-C18
1200 T2AL 250V 19372
F113
5200 100u
7200 BSN304
14V2
7202 BSN20
0392 PH-B
Vs Va alignment
F240
F241
6206 BAS316
6142 BYV28
VCC-SUPPLY
7212 TEA1507
78V5
7217 PSMN070
6216 BZX384-C18
7220 TCET1102
14V2
1V3
12V
10V9
5220 CT296F
6224 STPS20L40CFP
6225 STPS20L40CFP
5V2
5224 6u8
5225 6u8
5V
VCC
7227 TL431CZ
6230 BYV28
6232 BZX384-C15
7230 L4940
F116 12V4
F114 8V4
TO P4 FANCONTROL +12V
+8V6 TO P3 PROTECTION
6211 RS1G
6213 BAS316
3122 123 6004.5
CL 26532038_031.eps
040703

F116 = 12V4
F261 = 3V3
I101 = 76V
I124 = 10V6
I127 = 2V8
I128 = 3V9
I132 = 2V6
I200 = 97V
I201 = 78V3
I202 = 0V
I208 = 0V
I213 = 0V
I214 = 14V2
I220 = 9V
I261 = 17V3
I266 = 0V

0305	A13
0323	E13
0333	D12
0342	G12
0352	G13
0392	H4
1110	B1
1200	G5
1260	A6
2021	I3
2050	G3
2054	C1
2055	F2
2058	H2
2059	I1
2061	I2
2111	D1
2112	D1
2113	E1
2114	E2
2117	D3
2118	C4
2121	D11
2122	D8
2123	D8
2126	E8
2133	E9
2138	D6
2203	I4
2205	I6
2210	I6
2211	I7
2212	H7
2217	I8
2218	H9
2219	H9
2222	H10
2223	G10
2224	G10
2225	H10
2226	H11
2227	G11
2228	H12
2230	I11
2231	I11
2232	I10
2260	B7
2261	A7
2262	A7
2263	B8
2264	B8
2265	A8
2266	B8
2267	B10
2268	A10
2269	B11
2270	A9
3051	G2
3053	H3
3054	B1
3058	G2
3062	H2
3083	H2
3084	I1
3085	I1
3086	I2
3087	I1
3088	I1
3110	C2
3111	C2
3112	D1
3113	D2
3114	D2
3115	D3
3116	D3
3117	D3
3118	D4
3119	D4
3120	D7
3121	D7
3122	D8
3123	D8
3124	D8
3125	E8
3126	E7
3127	E7
3128	E8
3129	C1
3130	D8
3131	D9
3132	E8
3133	C8
3134	D10
3135	E10
3136	E10
3138	D5
3139	D6
3140	E6
3141	E6
3142	E6
3146	C6
3147	D9
3200	G5
3201	G6
3202	H5
3203	I4
3204	I5
3205	I5
3212	H6
3213	I7
3214	I7
3216	H8
3217	I8
3218	I9
3219	I9
3224	G11
3225	H11
3226	H11
3228	F12
3240	G4
3241	H4
3260	B7
3261	B7
3262	A8
3264	A8
3265	A8
3268	B11
4268	B11
5120	C5
5200	G5
5220	G9
5224	G11
5225	G11
5260	A6
5268	B11
6050	G3
6054	E1
6055	E1
6061	I3
6086	I1
6111	D1
6112	E1
6113	D2
6117	C3
6120	D4
6123	D8
6133	B6
6142	G4
6202	I4
6205	I5
6206	F5
6211	I7
6213	I7
6216	H8
6224	G10
6225	H10
6230	I10
6232	I10
6260	B7
6267	B10
7050	G3
7052	I3
7058	I1
7059	I2
7110	C2
7111	C2
7112	C2
7117	C3
7120	C4
7121	D7
7130	E9
7134	E10
7140-A	E5
7140-B	D6
7142	D6
7200	G6
7202	H5
7212	H7
7217	H8
7220	F9
7227	H11
7230	I11
7260	A10
F102	C13
F106	F13
F107	G13
F110	A1
F111	C9
F113	G4
F114	I11
F115	A9
F116	I11
F118	E12
F119	E12
F120	F12
F121	E13
F122	C12
F123	E13
F124	C12
F125	E11
F126	E11
F127	E11
F128	E11
F129	F12
F130	D12
F131	D12
F132	F13
F133	F12
F134	F12
F135	G12
F136	G12
F137	H13
F138	H12
F139	H13
F140	G12
F240	H4
F241	H4
F260	A6
F261	B12
F262	B12
F263	B13
F264	B13
I101	B2
I102	C2
I103	C3
I104	C2
I105	C1
I106	C3
I107	D4
I108	D5
I109	D2
I110	D3
I111	D4
I112	D3
I113	E1
I114	E2
I115	D2
I116	D2
I117	D3
I118	C4
I120	D8
I121	D7
I122	E11
I123	D9
I124	D7
I125	D9
I126	D8
I127	D8
I128	D8
I129	E10
I131	E7
I132	E9
I135	C6
I152	C9
I153	D6
I154	D7
I155	D6
I156	D6
I157	E6
I158	C1
I159	E1
I160	E2
I161	G2
I200	G3
I201	H3
I202	I3
I203	I2
I204	I1
I207	I1
I208	H5
I209	H9
I210	G5
I211	G6
I212	G6
I213	H5
I214	H7
I215	H6
I216	H8
I217	H8
I218	H7
I219	I8
I220	H4
I221	I7
I222	I4
I224	I8
I225	I1
I230	F11
I231	F11
I232	G10
I233	G10
I234	G11
I235	G10
I236	H9
I237	H11
I238	H10
I240	I9
I241	I10
I243	I10
I259	A9
I260	A6
I261	A7
I262	A8
I263	A8
I264	B8
I265	B7
I266	B7
I267	A10
I268	B11
I269	B10
I270	B11

Layout Power Supply Panel (FM23 AC) (Top Side)

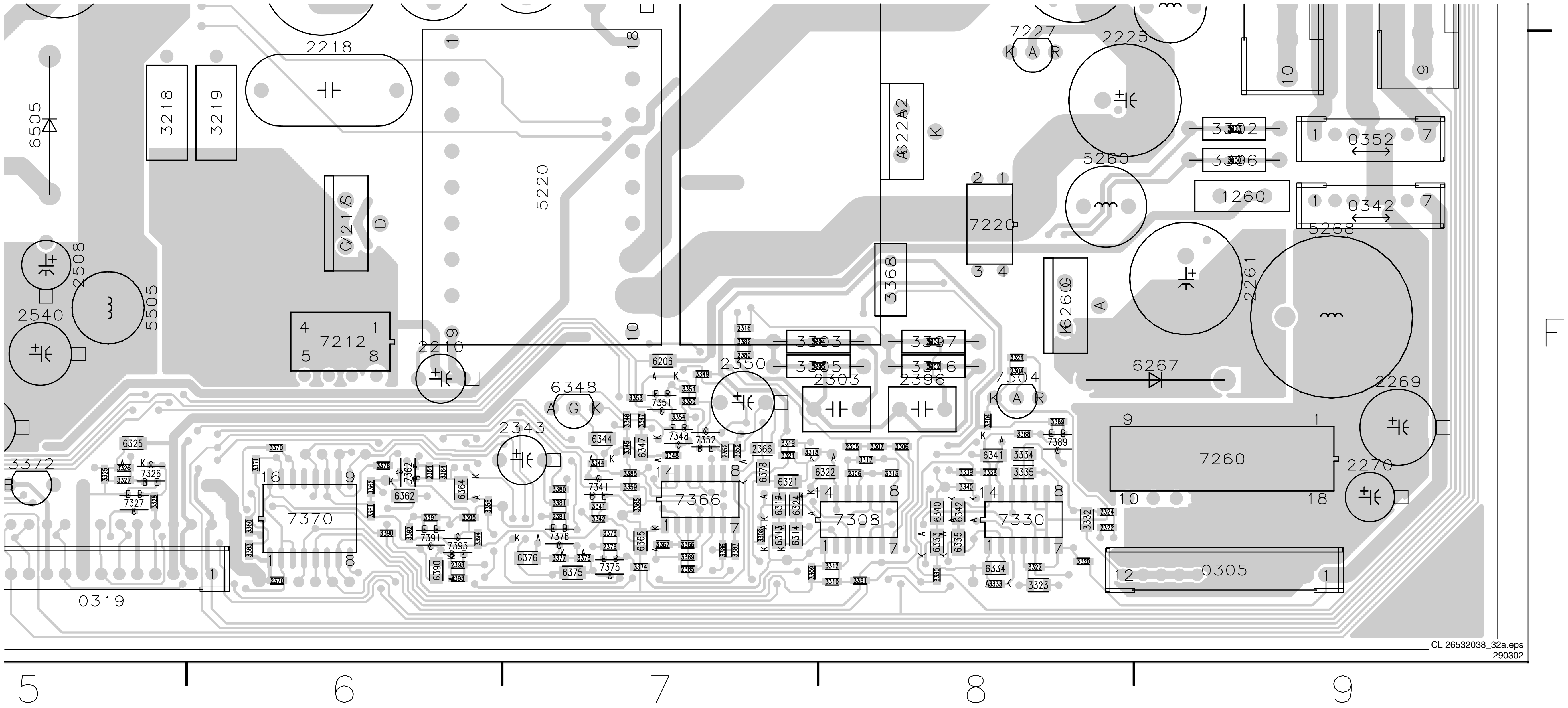


This part CL 26532038_32a.eps see next page.

CL 26532038_032.eps
030703

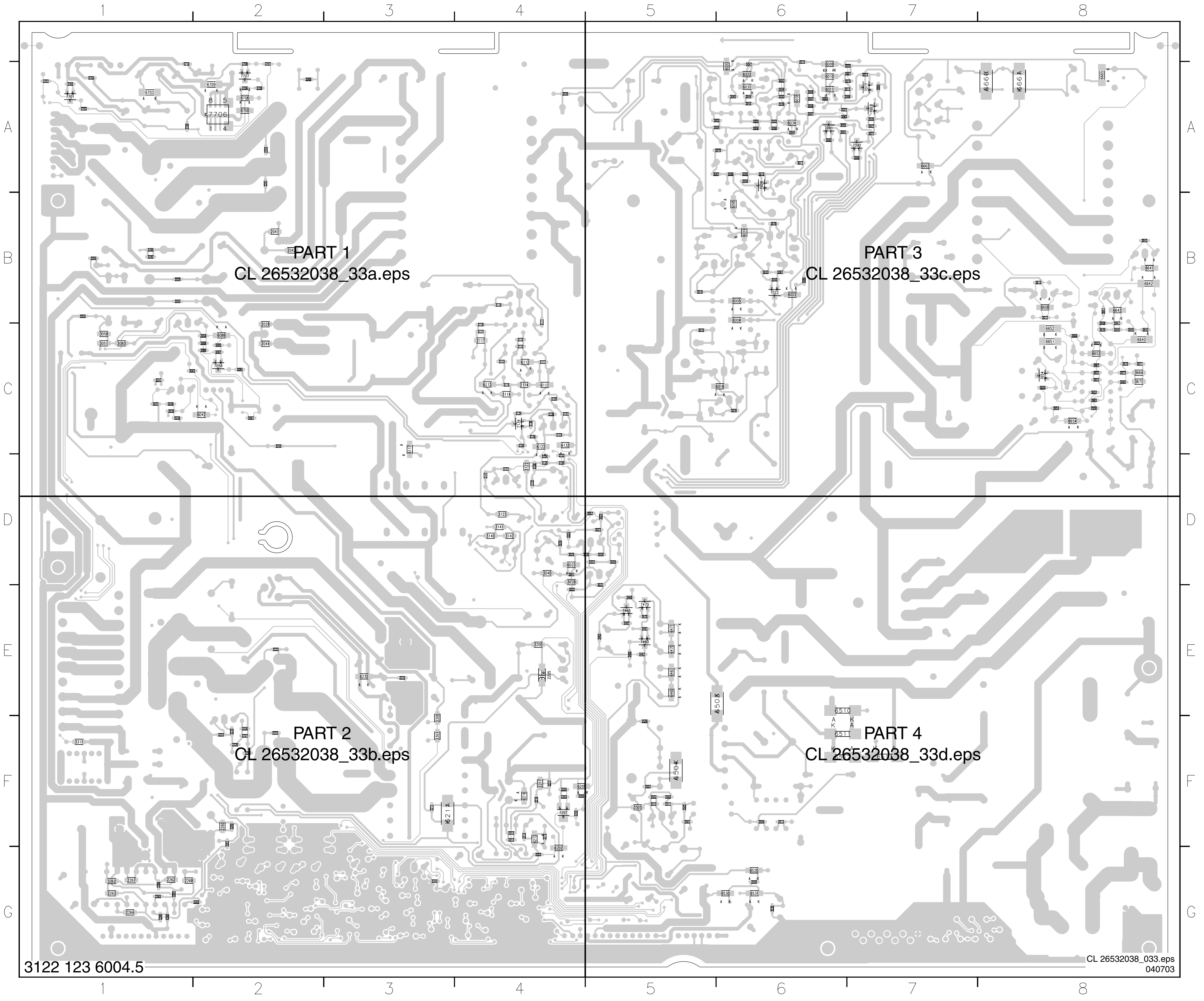
0201	B5	2402	F1	3345	F7	5292	A9	7140	D7
0203	D4	2403	F2	3346	F7	5293	A9	7142	D6
0204	D7	2404	F3	3347	F7	5401	F2	7200	E6
0302	A9	2405	E1	3348	F7	5402	E2	7212	F6
0305	F9	2406	E3	3349	F7	5500	F5	7217	F6
0306	F5	2407	E1	3350	F7	5505	F5	7220	F8
0307	F3	2465	E5	3351	F7	5600	B2	7227	F8
0308	F2	2503	E4	3352	F7	5612	C3	7230	E8
0319	F5	2505	C4	3353	F7	5703	A9	7260	F9
0323	E9	2508	F5	3354	F7	5709	A8	7304	F8
0333	E9	2510	E5	3358	F6	6007	C4	7308	F8
0342	F9	2530	F4	3359	F7	6008	B4	7326	F5
0352	F9	2532	F5	3360	F6	6012	A5	7327	F5
0389	A9	2533	F4	3361	F6	6013	C5	7330	F8
0390	A9	2540	F5	3362	F6	6021	B9	7341	F7
0392	C8	2541	F5	3363	F6	6027	C4	7348	F7
1004	C5	2600	E3	3364	F6	6028	B4	7351	F7
1005	B8	2601	D3	3365	F7	6041	B8	7352	F7
1041	A7	2605	D2	3366	F7	6043	C7	7362	F6
1042	A7	2610	C2	3367	F7	6044	C8	7366	F7
1045	B8	2611	C2	3368	F8	6045	B9	7370	F6
1084	B8	2616	D4	3369	F7	6050	D8	7375	F7
1110	B6	2652	C2	3370	F6	6054	B9	7376	F7
1200	E7	2654	C2	3371	F6	6055	B9	7389	F8
1260	F9	2655	C2	3372	F5	6061	C8	7391	F6
1400	F1	2662	A2	3373	F7	6075	C5	7393	F6
1401	E8	2663	A3	3374	F7	6077	A5	7500	F4
1402	F1	2664	A2	3376	F7	6120	C8	7501	F4
1450	E5	2673	D1	3377	F7	6142	D9	7502	F5
1460	E5	2674	C1	3378	F6	6206	F7	7530	F4
2000	A6	2700	A9	3380	F7	6224	E8	7531	F4
2001	B5	2703	A9	3381	F7	6225	F8	7540	F5
2002	A4	2709	A8	3382	F7	6230	E7	7608	B2
2003	A4	3014	C4	3385	F7	6260	F8	7610	B3
2004	A4	3015	C4	3386	F7	6267	F9	7640	B1
2005	A4	3017	B4	3387	F7	6291	A8	7641	B1
2009	A4	3018	B4	3388	F8	6312	F7	7650	C2
2011	B5	3021	A5	3389	F8	6313	F7	7660	A3
2012	A5	3024	E8	3390	F6	6314	F7	7700	A8
2013	C5	3026	D6	3391	F6	6321	F7		
2014	A5	3046	A6	3392	F6	6322	F8		
2016	A4	3050	B5	3393	F6	6324	F7		
2017	B5	3053	C9	3394	F6	6325	F5		
2020	C9	3054	B9	3395	F6	6333	F8		
2021	D9	3075	C4	3396	F9	6334	F8		
2022	B9	3077	A5	3397	F8	6335	F8		
2025	E8	3118	C7	3400	F2	6340	F8		
2034	A6	3119	C7	3401	F2	6341	F8		
2043	B7	3127	D6	3402	F3	6342	F8		
2050	D8	3129	B6	3403	F3	6344	F7		
2058	B9	3138	D7	3404	F1	6347	F7		
2090	A4	3139	D7	3450	E4	6348	F7		
2113	C6	3146	E7	3451	E4	6362	F6		
2118	C6	3201	E6	3452	D2	6364	F6		
2121	D6	3218	F5	3506	E4	6365	F7		
2122	D6	3219	F6	3507	F4	6375	F7		
2133	D6	3302	F9	3508	D4	6376	F7		
2138	E6	3303	F8	3608	B2	6378	F7		
2210	F6	3304	F8	3610	B2	6390	F6		
2218	F6	3305	F8	3611	B3	6501	F4		
2219	E6	3306	F8	3614	C2	6502	F4		
2224	E8	3307	F8	3615	C2	6505	F5		
2225	F8	3308	F7	3650	C2	6600	E3		
2228	E9	3309	F7	3653	B2	6605	D4		
2230	E7	3310	F8	3662	A3	6606	E4		
2231	E7	3312	F8	3663	A3	6609	B3		
2261	F9	3313	F8	3666	C2	6611	C3		
2269	F9	3316	F8	3668	C1	6616	C3		
2270	F9	3317	F8	3670	D1	7001	A4		
2292	A8	3318	F7	3673	C1	7002	D5		
2294	A9	3319	F7	3674	C1	7003	D5		
2303	F8	3320	F8	3675	A3	7005	C5		
2304	F8	3321	F7	3676	A3	7006	A5		
2305	F8	3322	F8	3800	F9	7007	C4		
2306	F8	3323	F8	3801	F8	7008	B4		
2316	F7	3324	F8	3802	F8	7010	D5		
2322	F8	3325	F5	3803	F9	7011	D5		
2324	F8	3326	F5	3804	F8	7020	C4		
2343	F7	3327	F5	3805	F8	7021	B4		
2350	F7	3328	F5	4300	F2	7042	C9		
2352	F7	3330	F8	5001	B4	7050	C8		
2364	F6	3331	F8	5002	B6	7052	C8		
2366	F7	3332	F8	5003	D5	7059	B8		
2370	F6	3333	F8	5120	D7	7092	B4		
2376	F7	3334	F8	5200	E6	7093	B4		
2380	F7	3335	F8	5220	F7	7110	B6		
2381	F7	3338	F8	5224	E9	7111	B6		
2385	F7	3339	F8	5225	E9	7112	C6		
2393	F6	3340	F8	5260	F8	7117	C6		
2396	F8	3341	F7	5268	F9	7120	C6		
2400	F2	3342	F7	5290	B9	7121	C6		
2401	F3	3344	F7	5291	A9	7130	D6		

Layout Power Supply Panel (FM23 AC) (Part 1 Top Side)


2218
3218
3219
6505
5220
2175
7212
2508
5505
2540
2210
6348
2343
6325
3372
7326
7327
7370
0319
6362
6364
7391
7393
6390
7376
7375
6376
6375
7341
6344
7351
7348
7352
6206
7366
2350
3303
3305
2303
2396
3397
3316
3368
6225
7220
7227
2225
5260
3302
3306
1260
0352
0342
5268
2261
6260
6267
2269
7304
7260
2270
7308
7330
6341
3334
3335
7389
6322
6321
6334
3323
0305
2366
6378
5
6
7
8
9
F

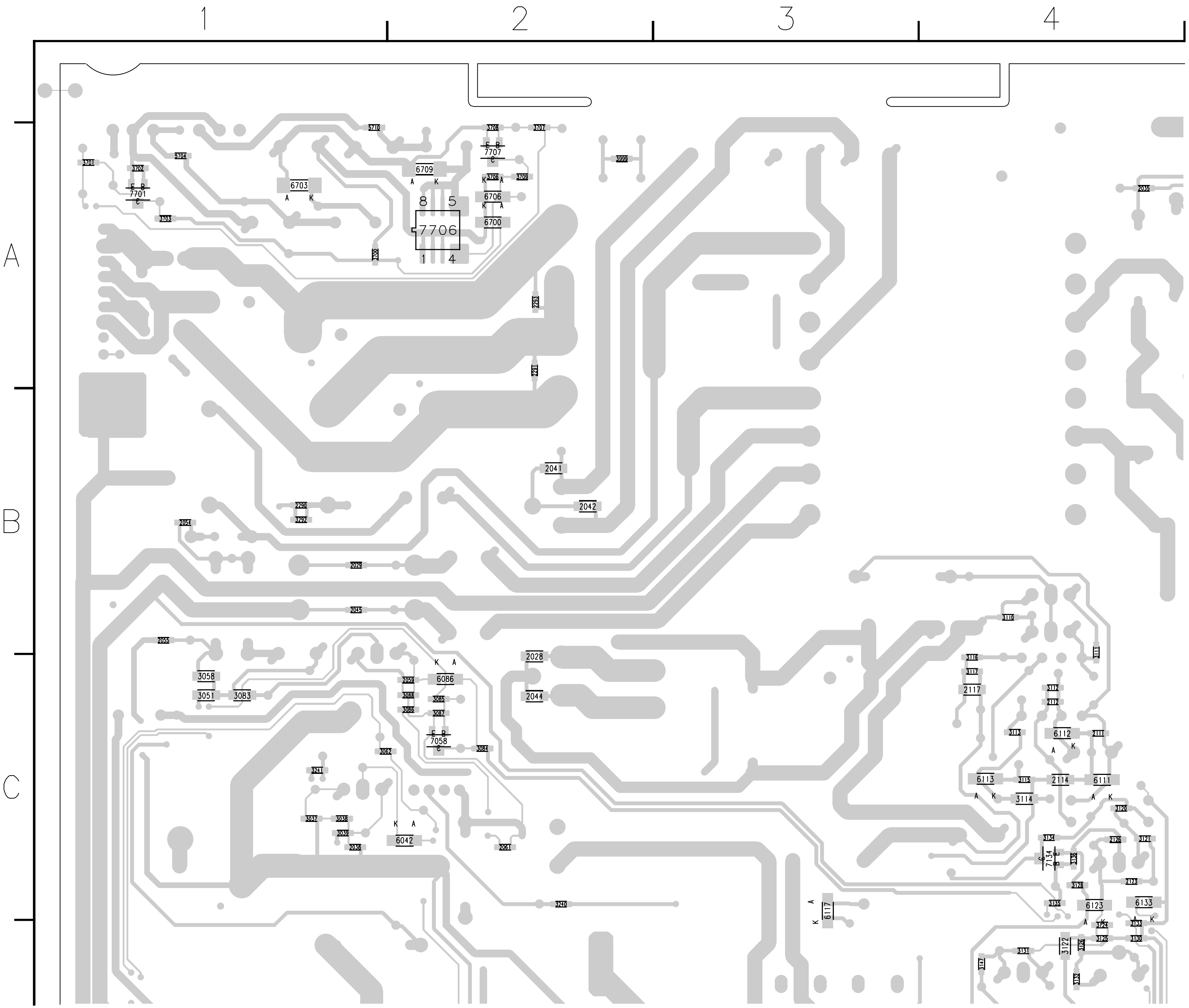
CL 26532038_32a.eps
290302

Layout Power Supply Panel (FM23 AC) (Overview Bottom Side)



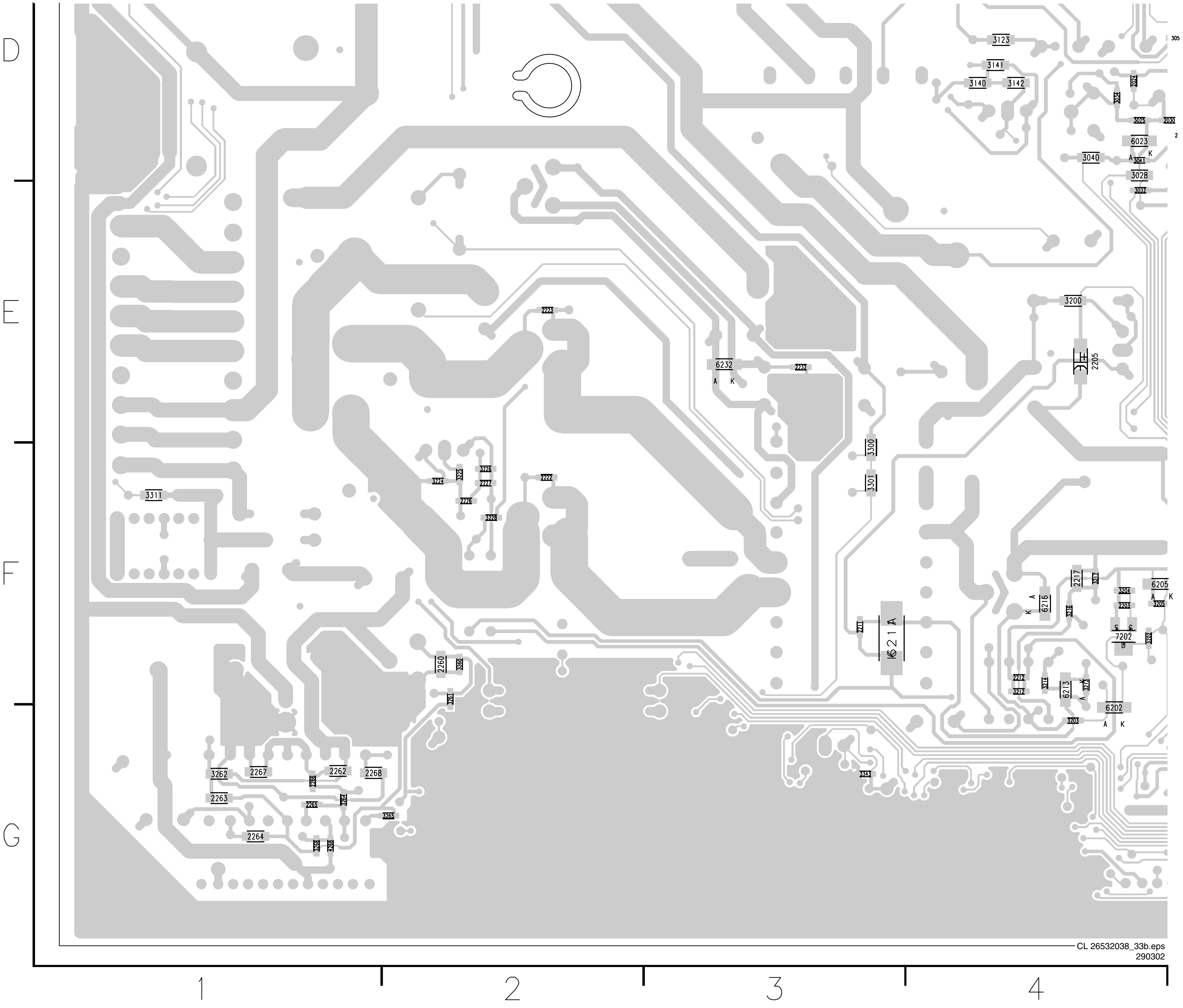
2006	A6
2007	A6
2008	A7
2010	A7
2015	A6
2023	D5
2024	D4
2026	A7
2027	A6
2028	C2
2029	B1
2030	D5
2032	A6
2033	A6
2035	A4
2036	A6
2038	C1
2040	B6
2041	B2
2042	B2
2044	C2
2045	B1
2054	B1
2055	B1
2059	C2
2061	C2
2111	C4
2112	C4
2114	C4
2117	C4
2123	C4
2126	C4
2203	F4
2205	E4
2211	F3
2212	F4
2217	F4
2222	F2
2223	E2
2226	F2
2227	F2
2232	E3
2260	F2
2262	G1
2263	G1
2264	G1
2265	G1
2266	G1
2267	G1
2268	G1
2290	B1
2291	A2
2293	A2
2504	F6
2507	F5
2509	F5
2511	F5
2512	F5
2513	F6
2608	C8
2612	B8
2613	B8
2640	C8
2641	C8
2642	B8
2651	C8
2653	C8
2656	C8
2665	C8
2666	C8
2670	C8
2671	C8
2672	C8
3003	A6
3004	A6
3005	A6
3006	A6
3007	A6
3008	A6
3009	A6
3010	A6
3011	A6
3012	A7
3013	A7
3016	C5
3019	B5
3020	A7
3022	D5
3023	D5
3025	D4
3027	A7
3028	D4
3029	D5
3030	D5
3031	E5
3032	E4
3033	B6
3034	D4
3037	C1
3038	C1
3039	C1
3040	D4
3041	D4
3042	A6
3043	A6
3044	A6
3045	A6
3047	A6
3048	A6
3049	A6
3051	C1
3056	A6
3057	D5
3058	C1
3062	C1
3064	A7
3065	A6
3066	A6
3067	A7
3070	A6
3071	A7
3076	C6
3078	B6
3080	B6
3081	B6
3083	C1
3084	C2
3085	C2
3086	C2
3087	C2
3088	C2
3090	A7
3091	A6
3092	A6
3093	A6
3095	A6
3096	A6
3097	A6
3110	B4
3111	B4
3112	C4
3113	C4
3114	C4
3115	C4
3116	C4
3117	C4
3120	C4
3121	C4
3122	D4
3123	D4
3124	D4
3125	D4
3126	D4
3128	C4
3130	D4
3131	D4
3132	D4
3133	D4
3134	C4
3135	C4
3136	C4
3140	D4
3141	D4
3142	D4
3147	D4
3200	E4
3202	F4
3203	G4
3204	F4
3205	F4
3212	F4
3213	F4
3214	F4
3216	F4
3217	F4
3224	F2
3225	F2
3226	F2
3228	F2
3240	C2
3241	C1
3260	F2
3261	F2
3262	G1
3264	G1
3265	G2
3268	G1
3292	B1
3300	F3
3301	F3
3311	F1
3343	G3
3460	E5
3461	E5
3463	E5
3465	E5
3467	E5
3469	E5
3470	E5
3501	F5
3502	F5
3503	F5
3504	F5
3505	F5
3520	G6
3530	G6
3639	C8
3640	C8
3641	B8
3642	C8
3651	C8
3652	C8
3654	C8
3655	C8
3664	C8
3665	C8
3667	C8
3671	C8
3700	A1
3701	A1
3702	A1
3703	A1
3706	A2
3707	A2
3708	A2
3709	A2
3999	A2
4268	G1
5704	A1
5710	A1
6004	B6
6005	B6
6009	A6
6010	A6
6011	A6
6018	C6
6019	B6
6022	B6
6023	D4
6031	A6
6032	A6
6033	A6
6034	A6
6035	A6
6042	C2
6086	C2
6095	B6
6111	C4
6112	C4
6113	C4
6117	C3
6123	C4
6133	C4
6202	G4
6205	F4
6211	F3
6213	F4
6216	F4
6232	E3
6460	E5
6461	E5
6470	E5
6471	E5
6503	E6
6504	F5
6510	E6
6511	F6
6512	F6
6513	F7
6520	G6
6530	G6
6531	G6
6608	B8
6640	C8
6641	B8
6642	B8
6643	B8
6651	C8
6652	C8
6653	C8
6654	C8
6660	A8
6661	A8
6663	A7
6665	A8
6700	A2
6703	A1
6706	A2
6709	A2
7009	A6
7017	A7
7018	A7
7022	B6
7058	C2
7090	A7
7091	A6
7134	C4
7202	F4
7460	E5
7465	E5
7470	E5
7654	C8
7701	A1
7706	A2
7707	A2

Layout Power Supply Panel (FM23 AC) (Part 1 Bottom Side)


1
2
3
4
A
B
C
7706
8
5
1
4
6709
6703
6706
6700
7701
7707
2041
2042
2028
2044
3058
3051
3083
6086
7058
6042
2117
6112
6113
2114
6111
3114
7134
6123
6133
3122
6117

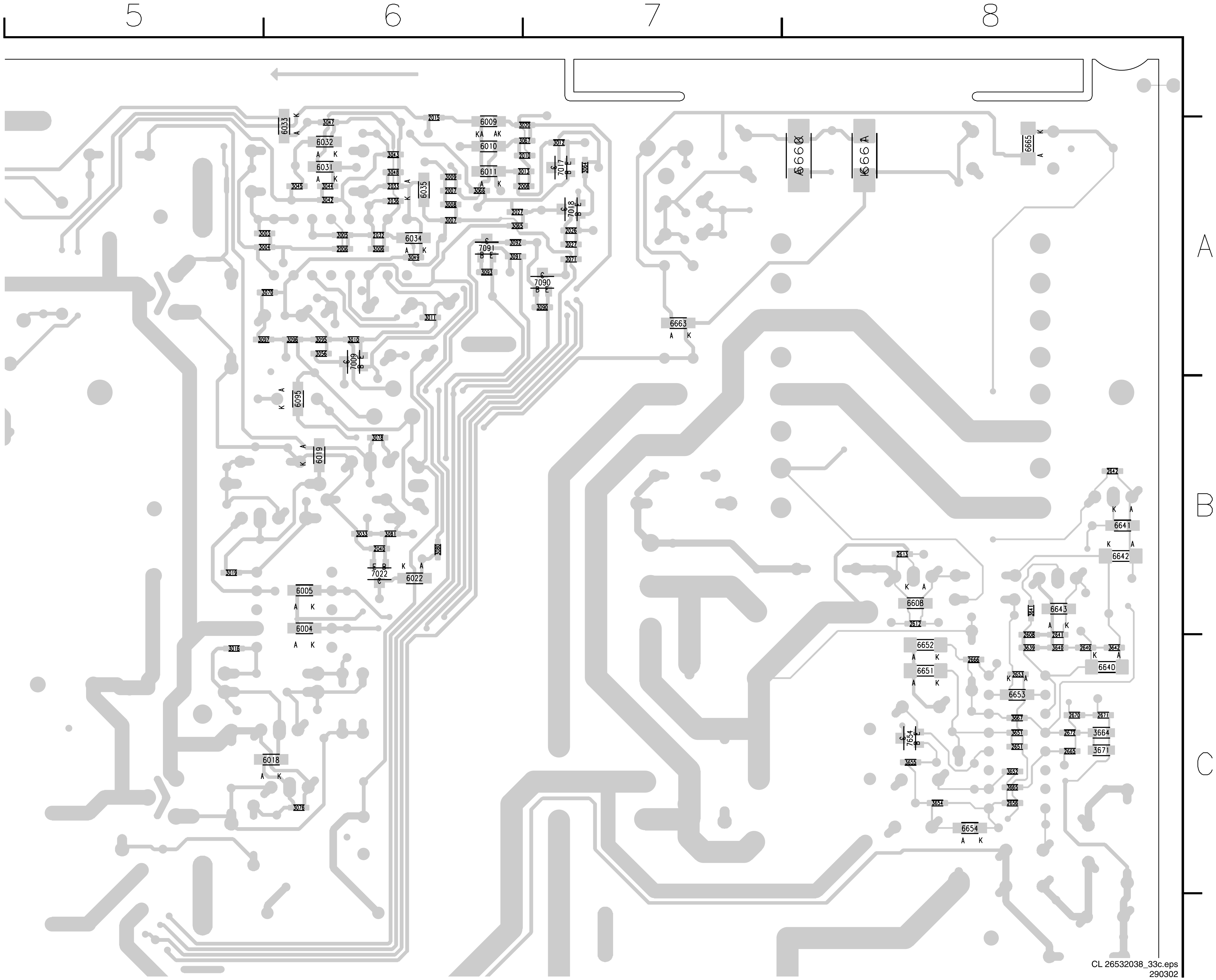
CL 26532038_33a.eps
290302

Layout Power Supply Panel (FM23 AC) (Part 2 Bottom Side)


D
E
F
G
1
2
3
4
3123
3141
3140
3142
3040
6023
3028
3200
2205
6232
A
K
3300
3301
3311
621
2217
6216
6205
7202
6213
6202
2260
3262
2267
2262
2268
2263
2264

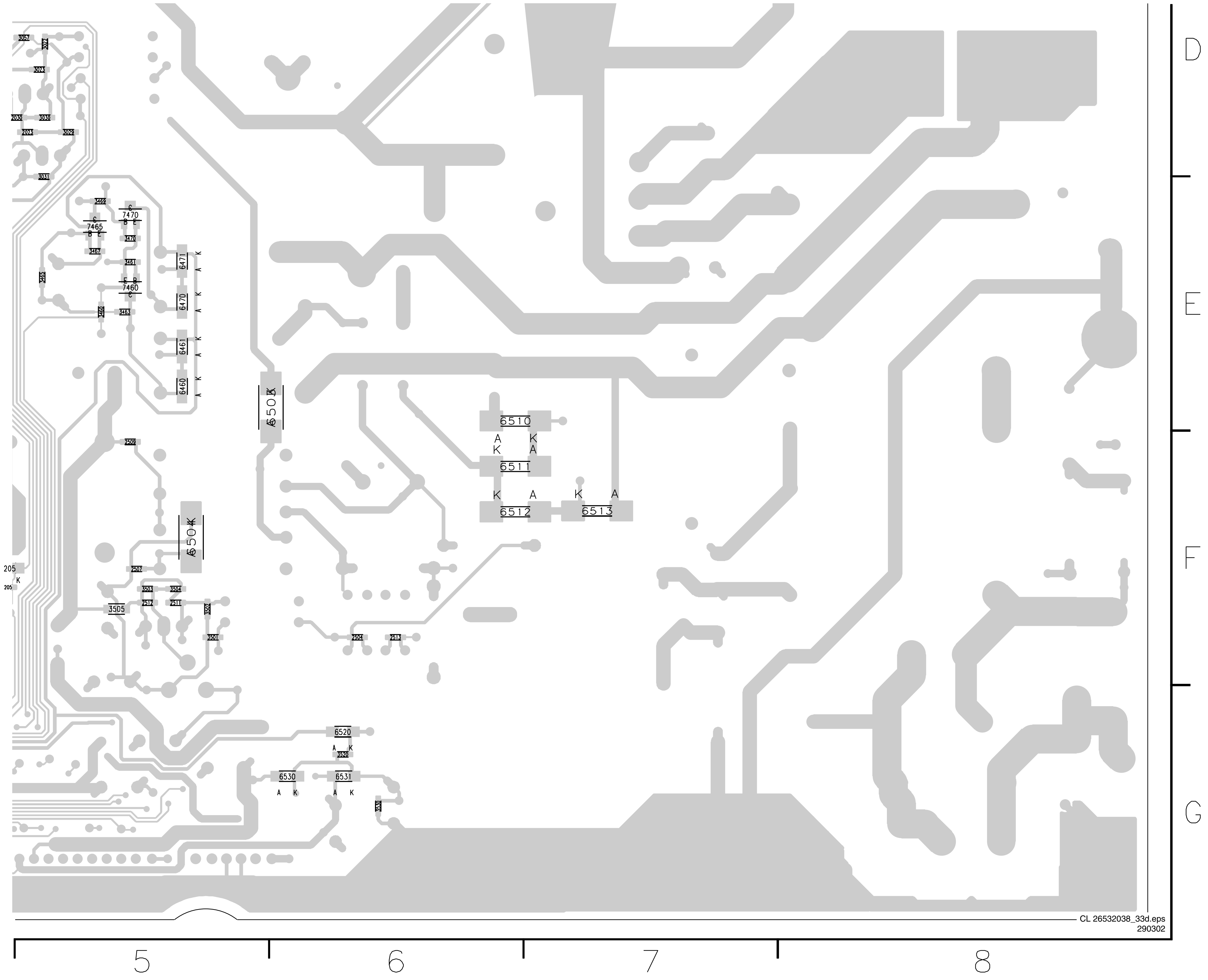
CL 26532038_33b.eps
290302

Layout Power Supply Panel (FM23 AC) (Part 3 Bottom Side)


5
6
7
8
A
B
C
6033
6032
6031
6009
6010
6011
6035
7017
7018
6034
7091
7090
7009
6095
6019
7022
6022
6005
6004
6018
6663
6660
6661
6665
6641
6642
6608
6643
6652
6651
6640
6653
7654
3664
3671
6654

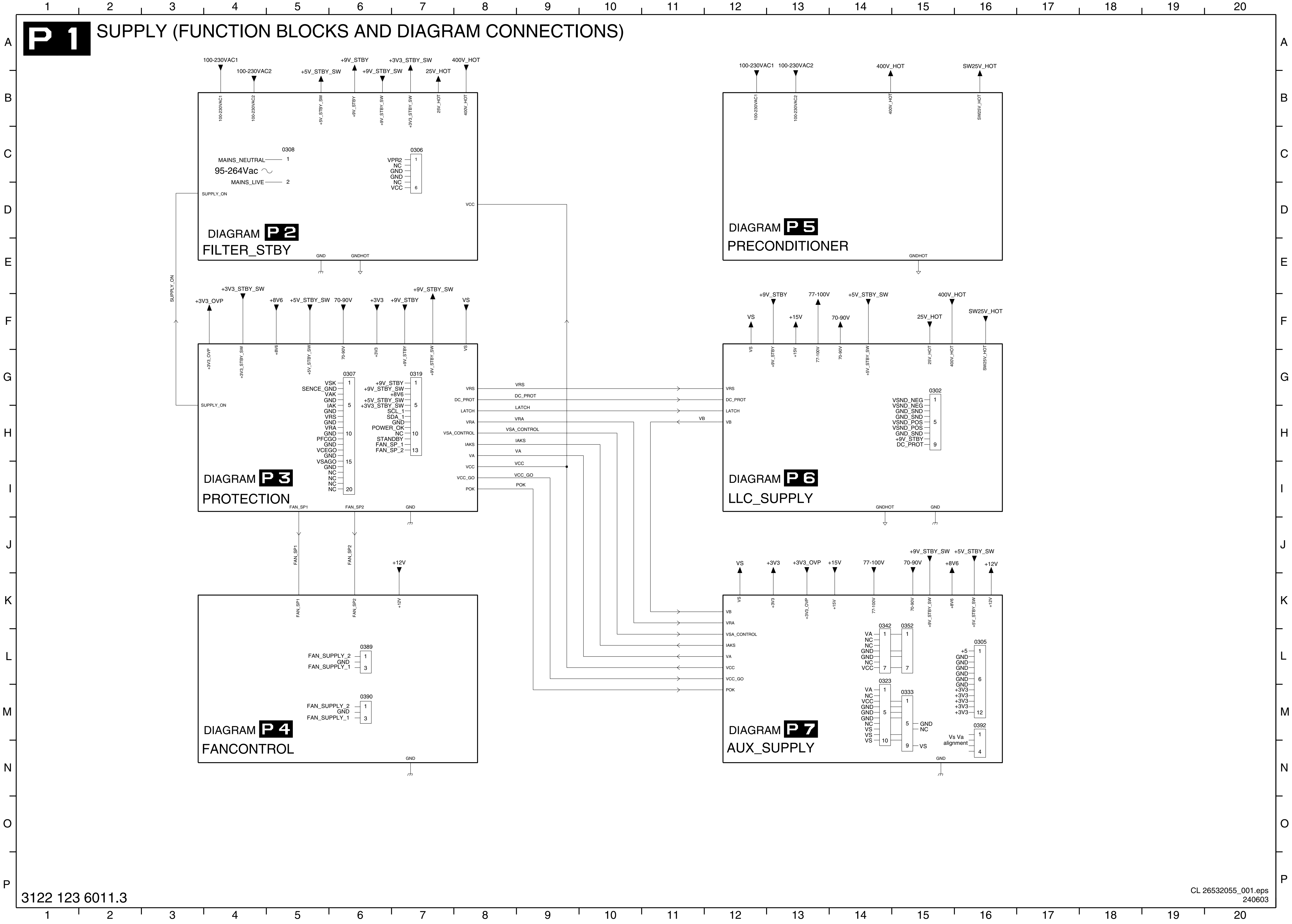
CL 26532038_33c.eps
290302

Layout Power Supply Panel (FM23 AC) (Part 4 Bottom Side)

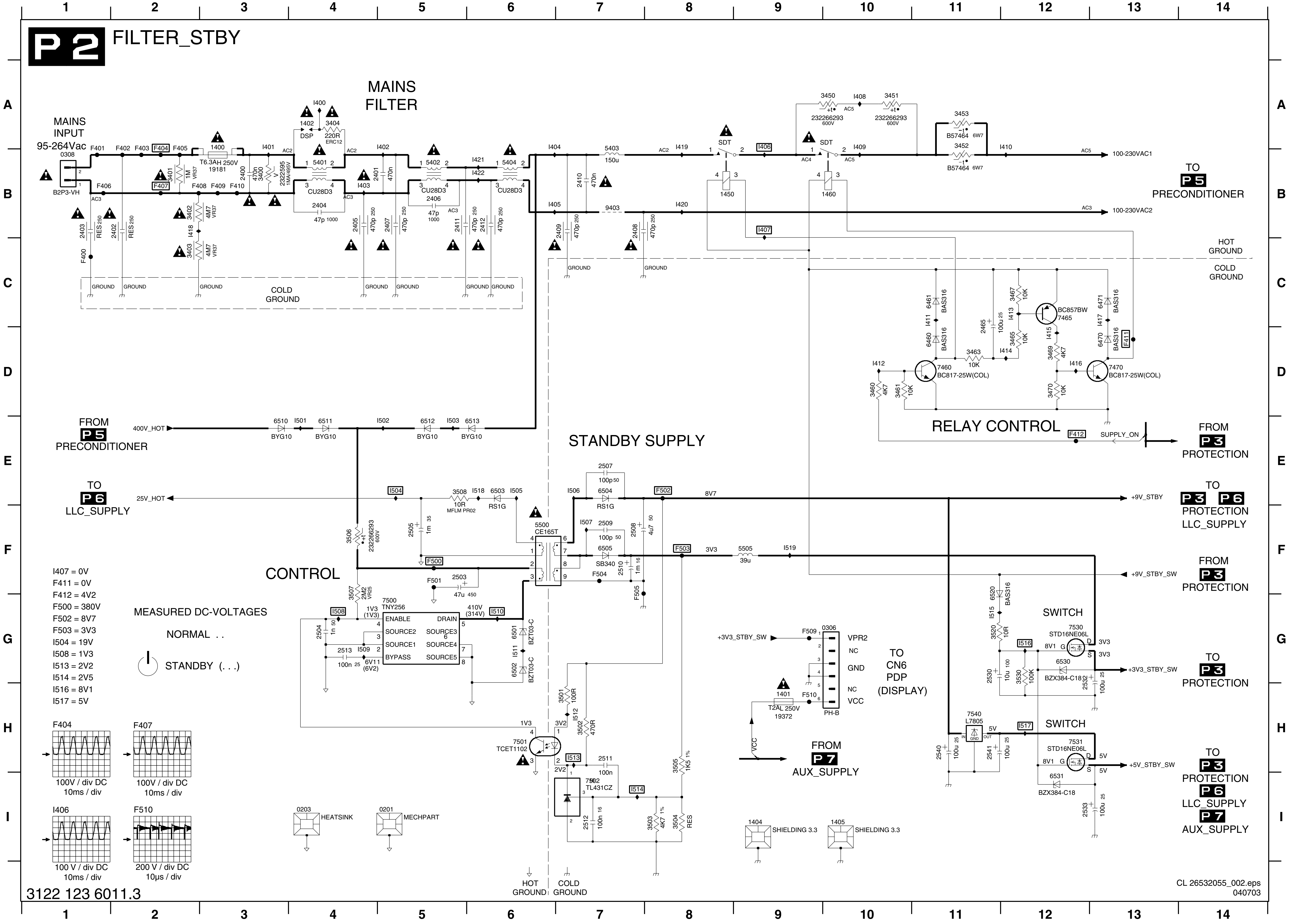

3057
3022
3023
2030
3030
2023
3029
3031
3469
7470
C
B E
7465
C
B E
3470
3467
3461
3465
E B
7460
C
3460
3463
6471
K A
6470
K A
6461
K A
6460
K A
6503
A K
2509
6504
A K
205
K
205
2507
3503
3504
3505
2512
2511
3502
3501
6510
A K
K A
6511
K A
6512
K A
6513
2504
2513
6520
A K
3520
6530
A K
6531
A K
3530
D
E
F
G
5
6
7
8

CL 26532038_33d.eps
290302

Power Supply Panel (FM24 AB): Function Blocks and Diagram Connections


P 1
SUPPLY (FUNCTION BLOCKS AND DIAGRAM CONNECTIONS)
DIAGRAM P 2
FILTER_STBY
100-230VAC1
100-230VAC2
+5V_STBY_SW
+9V_STBY
+9V_STBY_SW
+3V3_STBY_SW
25V_HOT
400V_HOT
0308
MAINS_NEUTRAL 1
95-264Vac
MAINS_LIVE 2
0306
VPR2 1
NC
GND
GND
NC
VCC 6
SUPPLY_ON
VCC
GND
GNDHOT
DIAGRAM P 5
PRECONDITIONER
SW25V_HOT
DIAGRAM P 3
PROTECTION
+3V3_OVP
+8V6
70-90V
+3V3
VS
0307
VSK
SENCE_GND
VAK
GND
IAK
GND
VRS
GND
VRA
GND
PFCGO
GND
VCEGO
GND
VSAGO
GND
NC
NC
NC
NC
0319
+9V_STBY
+9V_STBY_SW
+8V6
+5V_STBY_SW
+3V3_STBY_SW
SCL_1
SDA_1
GND
POWER_OK
NC
STANDBY
FAN_SP_1
FAN_SP_2
VRS
DC_PROT
LATCH
VRA
VSA_CONTROL
IAKS
VA
VCC
VCC_GO
POK
FAN_SP1
FAN_SP2
VB
DIAGRAM P 6
LLC_SUPPLY
+15V
77-100V
0302
VSND_NEG
VSND_NEG
GND_SND
GND_SND
VSND_POS
VSND_POS
GND_SND
+9V_STBY
DC_PROT
DIAGRAM P 4
FANCONTROL
+12V
0389
FAN_SUPPLY_2
GND
FAN_SUPPLY_1
0390
FAN_SUPPLY_2
GND
FAN_SUPPLY_1
DIAGRAM P 7
AUX_SUPPLY
0342
0352
VA
NC
NC
GND
GND
NC
VCC
0323
VA
NC
VCC
GND
GND
GND
NC
VS
VS
VS
0333
GND
NC
VS
0305
+5
GND
+3V3
0392
Vs Va alignment
3122 123 6011.3
CL 26532055_001.eps
240603

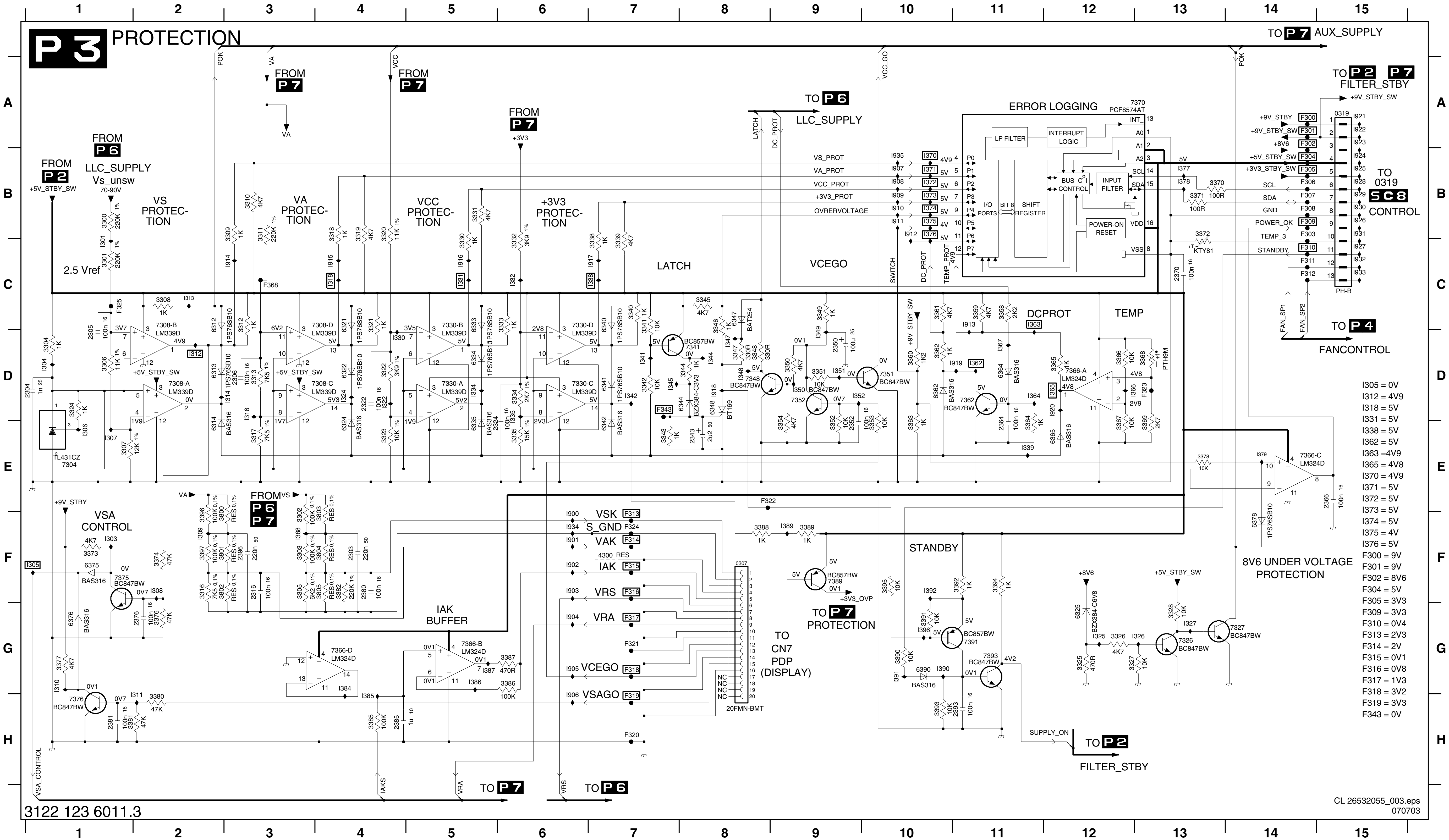
Power Supply Panel (FM24 AB): Filter Standby


P 2 FILTER_STBY
MAINS FILTER
MAINS INPUT 95-264Vac
0308
B2P3-VH
1400 T6.3AH 250V 19181
5401 CU28D3
5402 CU28D3
5404 CU28D3
5403 150u
9403
SDT
1450
1460
3450 232266293 600V
3451 232266293 600V
3452 B57464 6W7
3453 B57464 6W7
100-230VAC1
100-230VAC2
TO P 5 PRECONDITIONER
HOT GROUND
COLD GROUND
RELAY CONTROL
7460 BC817-25W(COL)
7465 BC857BW
7470 BC817-25W(COL)
SUPPLY_ON
FROM P 3 PROTECTION
FROM P 5 PRECONDITIONER
400V_HOT
TO P 6 LLC_SUPPLY
25V_HOT
STANDBY SUPPLY
CONTROL
5500 CE165T
7500 TNY256
ENABLE DRAIN SOURCE2 SOURCE3 SOURCE1 SOURCE4 BYPASS SOURCE5
8V7
+9V_STBY
TO P 3 P 6 PROTECTION LLC_SUPPLY
3V3
5505 39u
+9V_STBY_SW
FROM P 3 PROTECTION
SWITCH
7530 STD16NE06L
+3V3_STBY_SW
TO P 3 PROTECTION
7540 L7805
7531 STD16NE06L
+5V_STBY_SW
TO P 3 PROTECTION P 6 LLC_SUPPLY P 7 AUX_SUPPLY
0306 PH-B
VPR2 NC GND NC VCC
TO CN6 PDP (DISPLAY)
1401 T2AL 250V 19372
FROM P 7 AUX_SUPPLY
7501 TCET1102
7502 TL431CZ
0203 HEATSINK
0201 MECHPART
1404 SHIELDING 3.3
1405 SHIELDING 3.3
I407 = 0V
F411 = 0V
F412 = 4V2
F500 = 380V
F502 = 8V7
F503 = 3V3
I504 = 19V
I508 = 1V3
I513 = 2V2
I514 = 2V5
I516 = 8V1
I517 = 5V
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
F404 100V / div DC 10ms / div
F407 100V / div DC 10ms / div
I406 100 V / div DC 10ms / div
F510 200 V / div DC 10µs / div
HOT GROUND
COLD GROUND
3122 123 6011.3
CL 26532055_002.eps 040703

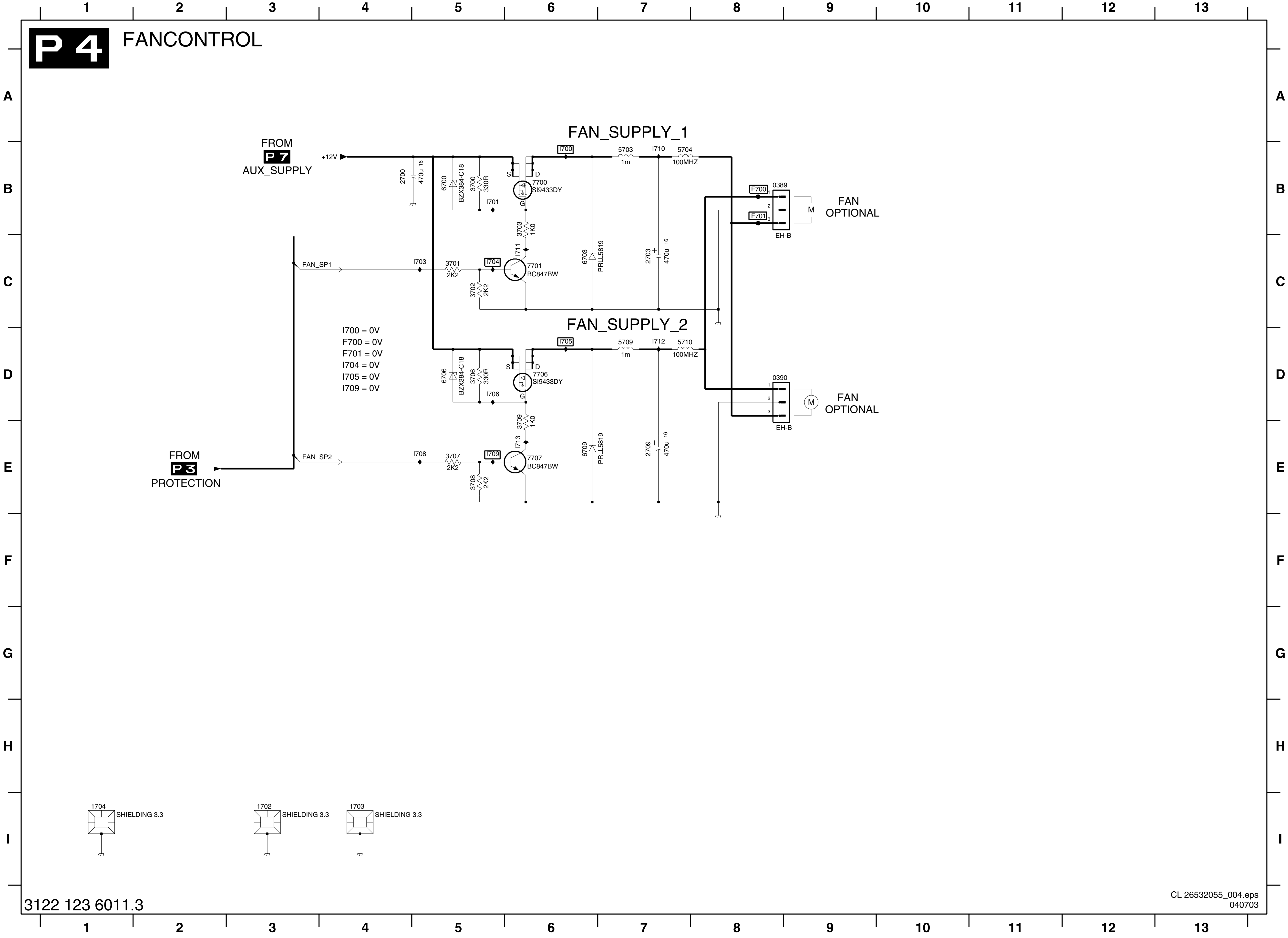
0201	I5
0203	I4
0306	G9
0308	B1
1400	B3
1401	H9
1402	A4
1404	I9
1405	I10
1450	B8
1460	B10
2400	B3
2401	B5
2402	B2
2403	B1
2404	B4
2405	B4
2406	B5
2407	B5
2408	B7
2409	B7
2410	B7
2411	B5
2412	B6
2465	C11
2503	F5
2504	G4
2505	F5
2507	E7
2508	F7
2509	F7
2510	F7
2511	H7
2512	I7
2513	G4
2530	G11
2532	G12
2533	I12
2540	H11
2541	H11
3400	B3
3401	B2
3402	B2
3403	C2
3404	A4
3450	A10
3451	A10
3452	A11
3453	A11
3460	D10
3461	D10
3463	D11
3465	D12
3467	C12
3469	D12
3470	D12
3501	H7
3502	H7
3503	I8
3504	I8
3505	H8
3506	F4
3507	F4
3508	E5
3520	G11
3530	G12
5401	B4
5402	B5
5403	B7
5404	B6
5500	F6
5505	F9
6460	D11
6461	C11
6470	D13
6471	C13
6501	G6
6502	G6
6503	E6
6504	E7
6505	F7
6510	E3
6511	E4
6512	E5
6513	E6
6520	F11
6530	G12
6531	I12
7460	D11
7465	C12
7470	D13
7500	G5
7501	H6
7502	I7
7530	G12
7531	H12
7540	H11
9403	B7
F400	C1
F401	B1
F402	B2
F403	B2
F404	B2
F405	B2
F406	B1
F407	B2
F408	B2
F409	B3
F410	B3
F411	D13
F412	E12
F500	F5
F501	F5
F502	E8
F503	F8
F504	F7
F505	F7
F509	G9
F510	H9
I400	A4
I401	A3
I402	A5
I403	B4
I404	A6
I405	B6
I406	A9
I407	B9
I408	A10
I409	A10
I410	A12
I411	C11
I412	D10
I413	C12
I414	D12
I415	D12
I416	D12
I417	C13
I418	B2
I419	A8
I420	B8
I421	B6
I422	B6
I501	E4
I502	E5
I503	E5
I504	E5
I505	E6
I506	E7
I507	F7
I508	G4
I509	G4
I510	G6
I511	G6
I512	H7
I513	H7
I514	I7
I515	G11
I516	G12
I517	H12
I518	E6
I519	F9

Power Supply Panel (FM24 AB): Protection

0307	F8
0319	A15
2303	F4
2304	D1
2305	D1
2306	D3
2316	F3
2322	D4
2324	E6
2343	E8
2350	D9
2352	E9
2364	E11
2366	E15
2370	C13
2376	G2
2380	F4
2381	H1
2385	H4
2393	H11
2396	F3
3300	B1
3301	C1
3302	F3
3303	F3
3304	D1
3305	F3
3306	D1
3307	E1
3308	C2
3309	B3
3310	B3
3311	B3
3312	C3
3313	D3
3316	F2
3317	E3
3318	B4
3319	B4
3320	B4
3321	C4
3322	D4
3323	E4
3324	D1
3325	G12
3326	G12
3327	G12
3328	G13
3330	C5
3331	B5
3332	C6
3333	C6
3334	D6
3335	E6
3338	C7
3339	C7
3340	C7
3341	C7
3342	D7
3343	E7
3344	D8
3345	C8
3346	C8
3347	D8
3348	D8
3349	C9
3350	D9
3351	D9
3352	E9
3353	E10
3354	E9
3358	C11
3359	C11
3360	D10
3361	C10
3362	D10
3363	E10
3364	E11
3365	D12
3366	D12
3367	E12
3368	D13
3369	E13
3370	B13
3371	B13
3372	B13
3373	F1
3374	F2
3376	G2
3377	G1
3378	E13
3380	H2
3381	H1
3382	F4
3385	H4
3386	G6
3387	G6
3388	F8
3389	F9
3390	G10
3391	G10
3392	F11
3393	H10
3394	F11
3395	F10
3396	F2
3397	F2
3800	F2
3801	F2
3802	F2
3803	F4
3804	F4
3805	F4
4300	F7
6312	C2
6313	D2
6314	E2
6321	C4
6322	D4
6324	E4
6325	G12
6333	C5
6334	D5
6335	E5
6340	C7
6341	D7
6342	E7
6344	D8
6347	C8
6348	D8
6362	D10
6364	D11
6365	E12
6375	F1
6376	G1
6378	F14
6390	G10
7304	E1
7308-A	D2
7308-B	C2
7308-C	D3
7308-D	C3
7326	G13
7327	G14
7330-A	D5
7330-B	C5
7330-C	D6
7330-D	C6
7341	D8
7348	D8
7351	D10
7352	D9
7362	D11
7366-A	D12
7366-B	G5
7366-C	E14
7366-D	G4
7370	A13
7375	F1
7376	H1
7389	F9
7391	G11
7393	G11
F300	A14
F301	A14
F302	A14
F303	B14
F304	B14
F305	B14
F306	B14
F307	B14
F308	B14
F309	B14
F310	C14
F311	C14
F312	C14
F313	F7
F314	F7
F315	F7
F316	F7
F317	G7
F318	G7
F319	H7
F320	H7
F321	G7
F322	E8
F323	D13
F324	F7
F325	C1
F343	D7
F368	C3
I301	C1
I303	F1
I304	D1
I305	F1
I306	E1
I307	E1
I308	F2
I309	F2
I310	G1
I311	H2
I312	D2
I313	C2
I314	D3
I316	D3
I318	C4
I322	D4
I324	D4
I325	G12
I326	G13
I327	G13
I330	D4
I331	C5
I332	C6
I334	D5
I335	D6
I338	C7
I339	E11
I341	D7
I342	D7
I344	D8
I345	D7
I347	D8
I348	D8
I349	D9
I350	D9
I351	D9
I352	D9
I362	D11
I363	C11
I364	D11
I365	D12
I366	D12
I367	D11
I370	B10
I371	B10
I372	B10
I373	B10
I374	B10
I375	B10
I376	B10
I377	B13
I378	B13
I379	E14
I384	G4
I385	H4
I386	G5
I387	G5
I388	F3
I389	F9
I390	G10
I391	G10
I392	F10
I396	G10
I900	F6
I901	F6
I902	F6
I903	F6
I904	G6
I905	G6
I906	H6
I907	B10
I908	B10
I909	B10
I910	B10
I911	B10
I912	B10
I913	C11
I914	C3
I915	C4
I916	C5
I917	C7
I918	D8
I919	D11
I920	D12
I921	A15
I922	A15
I923	A15
I924	B15
I925	B15
I926	B15
I927	C15
I928	B15
I929	B15
I930	B15
I931	B15
I932	C15
I933	C15
I934	F6
I935	B10

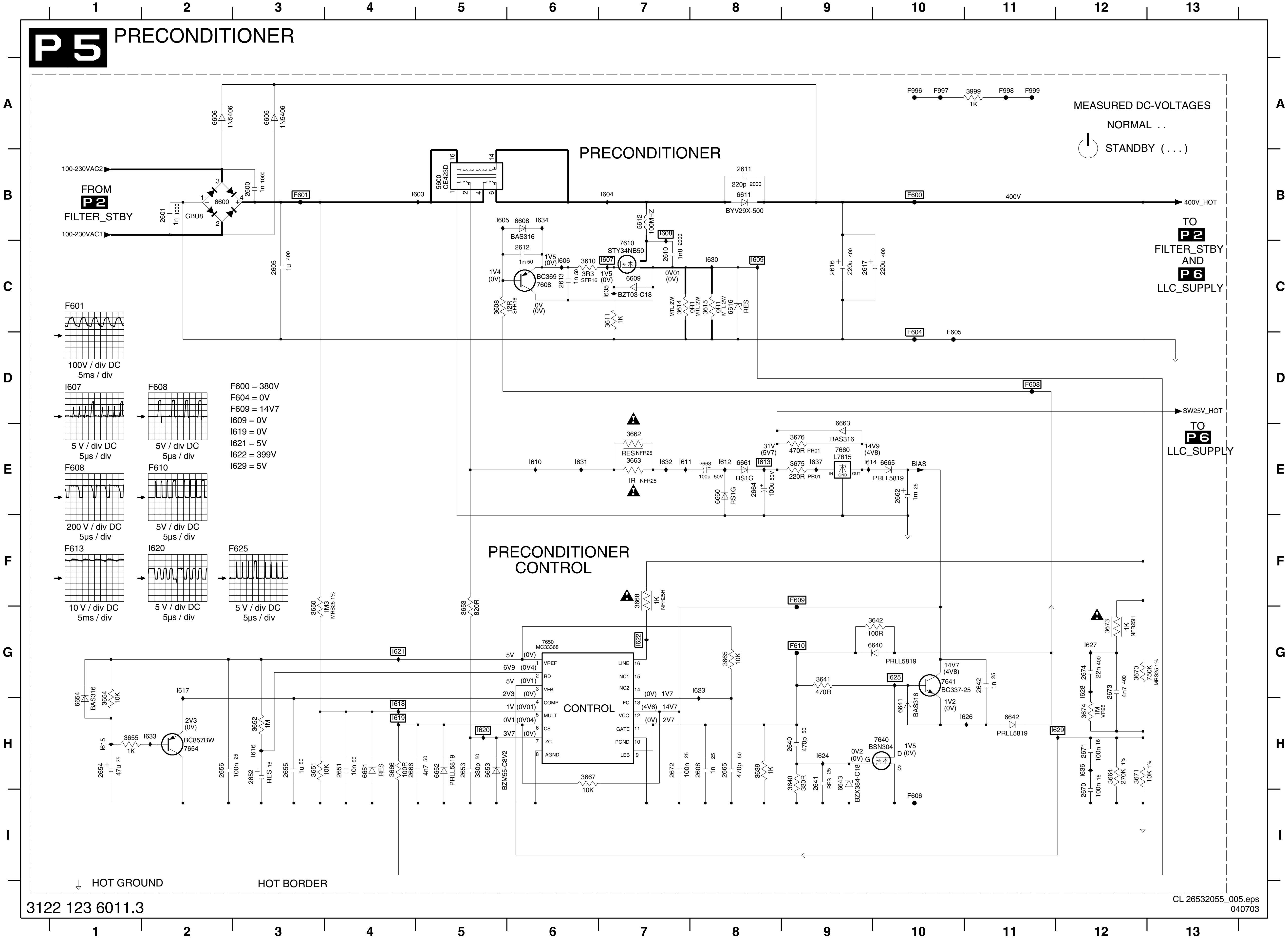

P 3 PROTECTION
TO P 7 AUX_SUPPLY
TO P 2 P 7 FILTER_STBY
FROM P 2 +5V_STBY_SW
FROM P 6 LLC_SUPPLY Vs_unsw
VS PROTECTION
VA PROTECTION
VCC PROTECTION
+3V3 PROTECTION
FROM P 7
TO P 6 LLC_SUPPLY
ERROR LOGGING
7370 PCF8574AT
LP FILTER
INTERRUPT LOGIC
I/O PORTS
SHIFT REGISTER
BUS CONTROL
INPUT FILTER
POWER-ON RESET
VS_PROT
VA_PROT
VCC_PROT
+3V3_PROT
OVERVOLTAGE
LATCH
VCEGO
DCPROT
TEMP
2.5 Vref
TL431CZ 7304
TO 0319 SC 8 CONTROL
TO P 4 FANCONTROL
VSA CONTROL
FROM P 6 P 7
IAK BUFFER
VSK
S_GND
VAK
IAK
VRS
VRA
VCEGO
VSAGO
TO CN7 PDP (DISPLAY)
20FMN-BMT
STANDBY
TO P 7 PROTECTION
+3V3_OVP
8V6 UNDER VOLTAGE PROTECTION
SUPPLY_ON
TO P 2 FILTER_STBY
TO P 7
TO P 6
VSA_CONTROL
IAKS
VRA
VRS
I305 = 0V
I312 = 4V9
I318 = 5V
I331 = 5V
I338 = 5V
I362 = 5V
I363 =4V9
I365 = 4V8
I370 = 4V9
I371 = 5V
I372 = 5V
I373 = 5V
I374 = 5V
I375 = 4V
I376 = 5V
F300 = 9V
F301 = 9V
F302 = 8V6
F304 = 5V
F305 = 3V3
F309 = 3V3
F310 = 0V4
F313 = 2V3
F314 = 2V
F315 = 0V1
F316 = 0V8
F317 = 1V3
F318 = 3V2
F319 = 3V3
F343 = 0V
3122 123 6011.3
CL 26532055_003.eps
070703

Power Supply Panel (FM24 AB): Fan Control


P 4
FANCONTROL
FROM
P 7
AUX_SUPPLY
+12V
FROM
P 3
PROTECTION
FAN_SP1
FAN_SP2
FAN_SUPPLY_1
FAN_SUPPLY_2
I700 = 0V
F700 = 0V
F701 = 0V
I704 = 0V
I705 = 0V
I709 = 0V
2700 470u 16
6700 BZX384-C18
3700 330R
I701
7700 SI9433DY
S
D
G
3703 1K0
I711
I703
3701 2K2
I704
7701 BC847BW
3702 2K2
I700
5703 1m
I710
5704 100MHZ
6703 PRLL5819
2703 470u 16
F700
F701
0389
EH-B
M
FAN OPTIONAL
6706 BZX384-C18
3706 330R
I706
7706 SI9433DY
3709 1K0
I713
I708
3707 2K2
I709
7707 BC847BW
3708 2K2
I705
5709 1m
I712
5710 100MHZ
6709 PRLL5819
2709 470u 16
0390
1
2
3
FAN OPTIONAL
1704 SHIELDING 3.3
1702 SHIELDING 3.3
1703 SHIELDING 3.3
A B C D E F G H I
1 2 3 4 5 6 7 8 9 10 11 12 13
3122 123 6011.3
CL 26532055_004.eps
040703

0389	B8
0390	D8
1702	I3
1703	I4
1704	I1
2700	B4
2703	C7
2709	E7
3700	B5
3701	C5
3702	C5
3703	B6
3706	D5
3707	E5
3708	E5
3709	E6
5703	B7
5704	B7
5709	D7
5710	D7
6700	B5
6703	C6
6706	D5
6709	E6
7700	B6
7701	C6
7706	D6
7707	E6
F700	B8
F701	B8
I700	B6
I701	B5
I703	C5
I704	C5
I705	D6
I706	D5
I708	E5
I709	E5
I710	B7
I711	C6
I712	D7
I713	E6

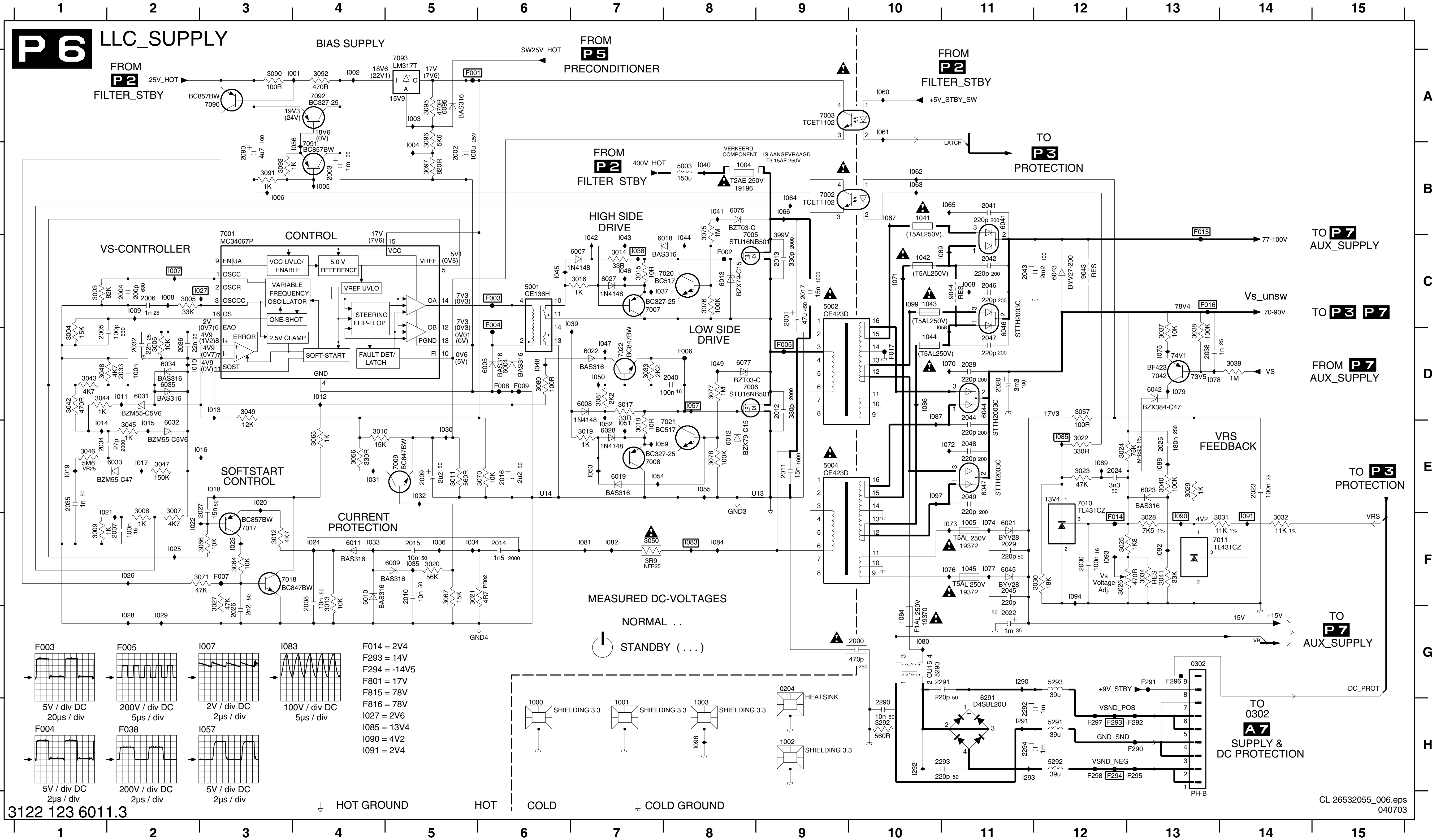
Power Supply Panel (FM24 AB): Pre-Conditioner


P 5
PRECONDITIONER
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
100-230VAC2
100-230VAC1
FROM
P 2
FILTER_STBY
6600 GBU8
2600 1n 1000
2601 1n 1000
6606 1N5406
6605 1N5406
2605 1u 400
F601
I603
5600 CE423D
PRECONDITIONER
I604
2611 220p 2000
6611 BYV29X-500
F600
400V
400V_HOT
TO
P 2
FILTER_STBY
AND
P 6
LLC_SUPPLY
5612 100MHZ
I608
7610 STY34NB50
2610 1n8 2000
I605 6608 I634 BAS316
2612 1n 50
1V5 (0V)
I606 3610 3R3 SFR16
I607
1V5 (0V)
6609 BZT03-C18
I630
I609
0V01 (0V)
1V4 (0V)
BC369 7608
2613 1n 50
3608 12R SFR16
0V (0V)
I635
3611 1K
3614 0R1 MTL 2W
3615 0R1 MTL 2W
6616 RES
2616 220u 400
2617 220u 400
F604
F605
F996 F997 3999 1K F998 F999
F601
100V / div DC
5ms / div
I607
5 V / div DC
5µs / div
F608
5V / div DC
5µs / div
F600 = 380V
F604 = 0V
F609 = 14V7
I609 = 0V
I619 = 0V
I621 = 5V
I622 = 399V
I629 = 5V
F608
200 V / div DC
5µs / div
F610
5V / div DC
5µs / div
F613
10 V / div DC
5ms / div
I620
5 V / div DC
5µs / div
F625
5 V / div DC
5µs / div
F608
SW25V_HOT
TO
P 6
LLC_SUPPLY
3662 RES NFR25
3663 1R NFR25
I610 I631 I632 I611
2663 100u 50V
I612 6661 RS1G
I613
6660 RS1G
2664 100u 50V
31V (5V7)
3676 470R PR01
3675 220R PR01
I637
6663 BAS316
7660 L7815
14V9 (4V8)
I614 6665 PRLL5819
BIAS
2662 1m 25
PRECONDITIONER
CONTROL
3650 1M3 MRS25 1%
3653 820R
3668 1K NFR25H
F609
I622
7650 MC33368
CONTROL
5V (0V) 1 VREF
6V9 (0V4) 2 RD
5V (0V1) 3 VFB
2V3 (0V) 4 COMP
1V (0V01) 5 MULT
0V1 (0V04) 6 CS
3V7 (0V) 7 ZC
8 AGND
LINE 16
NC1 15
NC2 14
FC 13 (0V) 1V7
VCC 12 (4V6) 14V7
GATE 11 (0V) 2V7
PGND 10
LEB 9
I623
3665 10K
3667 10K
I621
I618
I619
I620
I617
I633
I615
I616
6654 BAS316
3654 10K
3655 1K
7654 BC857BW
2V3 (0V)
3652 1M
2654 47u 25
2656 100n 25
2652 RES 16
2655 1u 50
3651 10K
2651 10n 50
6651 RES
3666 100R
2666 4n7 50
6652 PRLL5819
2653 330p 50
6653 BZM55-C8V2
2672 100n 25
2608 1n 25
2665 470p 50
3639 1K
F610
3642 100R
6640 PRLL5819
3641 470R
I625
7641 BC337-25
14V7 (4V8)
1V2 (0V)
6641 BAS316
2642 1n 25
I626
6642 PRLL5819
I629
2640 470p 50
I624
0V2 (0V)
7640 BSN304
1V5 (0V)
G D S
3640 330R
2641 RES 25
6643 BZX384-C18
F606
I627
3673 1K NFR25H
2674 22n 400
I628
2673 4n7 400
3670 750K MRS25 1%
3674 1M VR25
2671 100n 16
I636
2670 100n 16
3664 270K 1%
3671 10K 1%
HOT GROUND
HOT BORDER
3122 123 6011.3
CL 26532055_005.eps
040703
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I

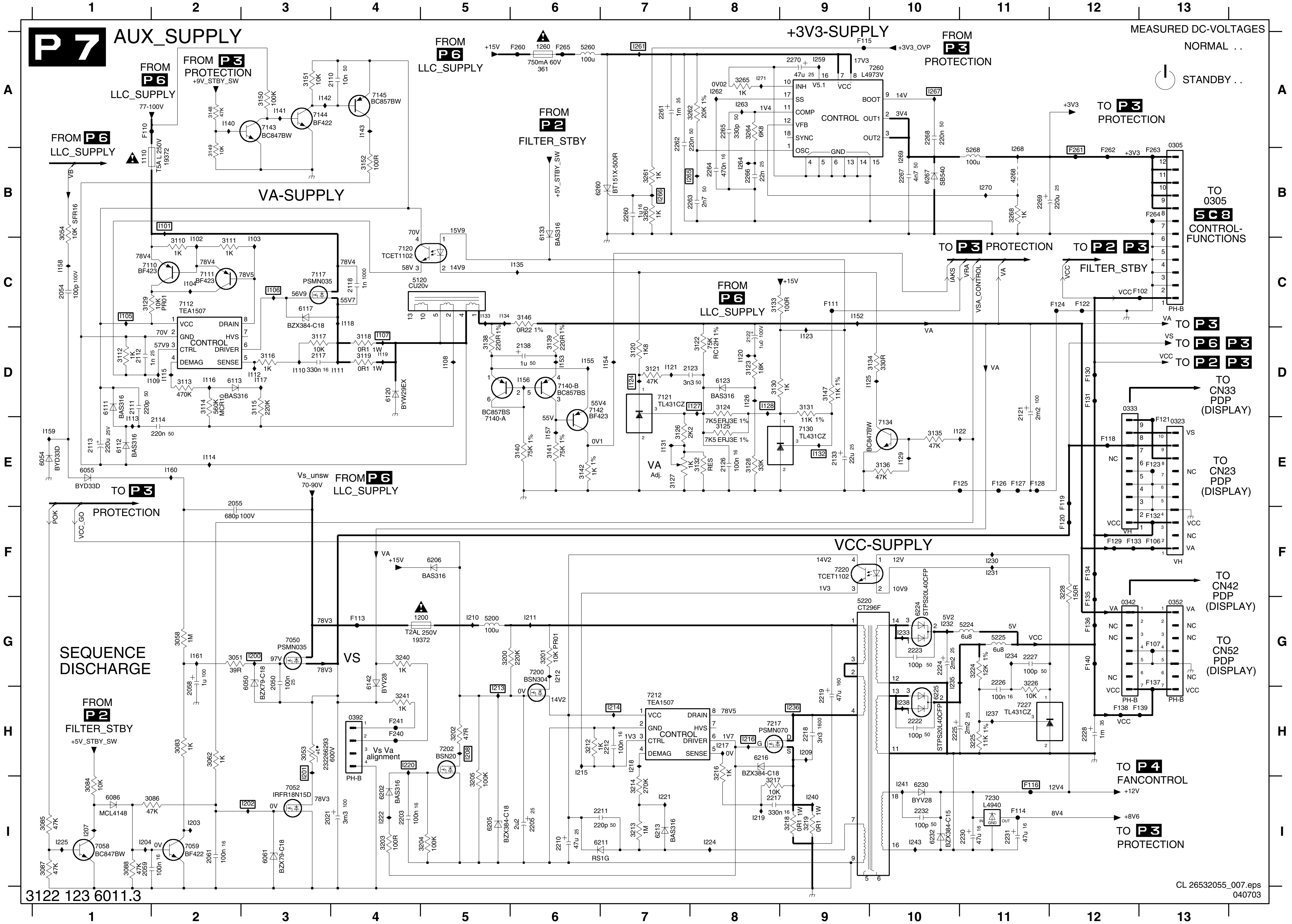
2600	B3
2601	B2
2605	C3
2608	H8
2610	C7
2611	B8
2612	C6
2613	C6
2616	C9
2617	C9
2640	H9
2641	H9
2642	G11
2651	H4
2652	H3
2653	H5
2654	H1
2655	H3
2656	H2
2662	E10
2663	E8
2664	E8
2665	H8
2666	H4
2670	I12
2671	H12
2672	H7
2673	G12
2674	G12
3608	C5
3610	C6
3611	C7
3614	C7
3615	C8
3639	H8
3640	H9
3641	G9
3642	G10
3650	G3
3651	H3
3652	H3
3653	G5
3654	H1
3655	H1
3662	E7
3663	E7
3664	H12
3665	G8
3666	H4
3667	H6
3668	F7
3670	G12
3671	H12
3673	G12
3674	H12
3675	E9
3676	E9
3999	A11
5600	B5
5612	B7
6600	B2
6605	A3
6606	A2
6608	B6
6609	C7
6611	B8
6616	C8
6640	G10
6641	H10
6642	H11
6643	H9
6651	H4
6652	H5
6653	H5
6654	H1
6660	E8
6661	E8
6663	E9
6665	E10
7608	C6
7610	C7
7640	H10
7641	G10
7650	G6
7654	H2
7660	E9
F600	B10
F601	B3
F604	D10
F605	D10
F606	I10
F608	D11
F609	F9
F610	G9
F996	A10
F997	A10
F998	A11
F999	A11
I603	B5
I604	B7
I605	B5
I606	C6
I607	C7
I608	B7
I609	C8
I610	E6
I611	E7
I612	E8
I613	E8
I614	E9
I615	H1
I616	H3
I617	G2
I618	H4
I619	H4
I620	H5
I621	G4
I622	G7
I623	G8
I624	H9
I625	G10
I626	H11
I627	G12
I628	G12
I629	H12
I630	C8
I631	E6
I632	E7
I633	H2
I634	B6
I635	C7
I636	H12
I637	E9

Power Supply Panel (FM24 AB): LLC Supply

U13 E9
U14 E6
0204 G9
0302 G13
1000 H6
1001 H7
1002 H9
1003 H8
1004 B8
1005 F11
1041 B10
1042 C10
1043 C10
1044 D10
1045 F11
1084 G10
2000 G10
2001 C9
2002 B5
2003 B4
2004 C2
2005 D1
2006 C2
2007 F2
2008 F4
2009 E5
2010 F5
2011 E9
2012 D9
2013 C9
2014 F6
2015 F5
2016 E6
2017 C9
2020 D11
2022 G11
2023 E14
2024 E12
2025 E13
2026 G3
2027 E3
2028 D11
2029 F11
2030 F12
2032 D2
2033 D2
2034 E1
2035 E1
2036 D2
2038 D13
2040 D8
2041 B11
2042 C11
2043 C11
2044 D11
2045 F11
2046 C11
2047 D11
2048 E11
2049 E11
2090 B3
2290 H10
2291 G11
2292 H11
2293 H11
2294 H11
3003 C1
3004 D1
3005 C2
3006 D2
3007 F2
3008 F2
3009 F1
3010 E4
3011 E5
3012 F3
3013 F4
3014 C7
3015 C7
3016 C7
3017 D7
3018 E7
3019 E7
3020 F5
3021 F5
3022 E12
3023 E12
3024 E12
3025 F12
3026 F12
3027 F3
3028 F13
3029 E13
3030 F12
3031 F14
3032 F14
3033 D7
3034 F13
3037 D13
3038 D13
3039 D14
3040 E13
3041 F13
3042 D1
3043 D1
3044 D1
3045 E2
3046 E1
3047 E2
3048 D1
3049 D3
3050 F7
3056 E4
3057 D12
3064 F3
3065 E4
3066 F3
3067 F5
3070 E6
3071 F3
3075 B8
3076 C8
3077 D8
3078 E8
3080 D6
3081 D7
3090 A3
3091 B3
3092 A4
3093 B3
3095 A5
3096 A5
3097 B5
3292 H10
5001 C6
5002 C9
5003 B8
5004 E9
5290 G10
5291 H12
5292 H12
5293 G12
6004 D6
6005 D6
6007 C7
6008 D7
6009 F5
6010 F4
6011 F4
6012 E8
6013 C8
6018 C8
6019 E7
6021 F11
6022 D7
6023 E13
6027 C7
6028 E7
6031 D2
6032 E2
6033 E2
6034 D2
6035 D2
6041 B11
6042 D13
6043 C12
6044 D11
6045 F11
6046 D11
6047 E11
6075 B8
6077 D8
6095 A5
6291 H11
7001 C3
7002 B9
7003 A9
7005 C8
7006 D8
7007 C7
7008 E7
7009 E5
7010 E12
7011 F13
7017 F3
7018 F3
7020 C8
7021 E8
7022 D7
7042 D13
7090 A3
7091 B4
7092 A4
7093 A5
9043 C12
9044 C11
F001 A5
F002 C8
F003 C6
F004 C6
F005 D9
F006 D8
F007 F3
F008 D6
F009 D6
F014 F12
F015 B13
F016 C13
F017 D10
F290 H13
F291 G13
F292 H13
F293 H12
F294 H12
F295 H13
F296 G13
F297 H12
F298 H12
I001 A4
I002 A4
I003 A5
I004 B5
I005 B4
I006 B3
I007 C2
I008 C2
I009 C2
I010 D2
I011 D2
I012 D4
I013 D3
I014 E1
I015 E2
I016 E3
I017 E2
I018 E3
I019 E1
I020 E3
I021 E1
I022 F2
I023 F3
I024 F4
I025 F2
I026 F2
I027 C3
I028 G2
I029 G2
I030 E5
I031 E4
I032 E5
I033 F4
I034 F5
I035 F5
I036 F5
I037 C7
I038 C7
I039 C7
I040 B8
I041 B8
I042 C7
I043 C7
I044 C8
I045 C6
I046 C7
I047 D7
I048 D6
I049 D8
I050 D7
I051 E7
I052 E7
I053 E7
I054 E7
I055 E8
I056 B4
I057 D8
I058 C11
I059 E7
I060 A10
I061 A10
I062 B10
I063 B10
I064 B9
I065 B11
I066 B9
I067 B10
I068 C11
I069 C10
I070 D11
I071 C10
I072 E11
I073 F11
I074 F11
I075 D13
I076 F11
I077 F11
I078 D13
I079 D13
I080 G10
I081 F7
I082 F7
I083 F8
I084 F8
I085 E12
I086 D10
I087 D10
I088 E13
I089 E12
I090 F13
I091 F14
I092 F13
I093 F12
I094 F12
I097 E10
I098 H8
I099 C10
I290 G11
I291 H11
I292 H10
I293 H11


P6
LLC_SUPPLY
FROM P2 FILTER_STBY
25V_HOT
BIAS SUPPLY
SW25V_HOT
FROM P5 PRECONDITIONER
7093 LM317T
F001
FROM P2 FILTER_STBY
+5V_STBY_SW
7003 TCET1102
TO P3 PROTECTION
LATCH
FROM P2 FILTER_STBY
400V_HOT
VERKEERD COMPONENT
IS AANGEVRAAGD T3.15AE 250V
T2AE 250V 19196
7002 TCET1102
VS-CONTROLLER
7001 MC34067P
CONTROL
VCC UVLO/ ENABLE
5.0 V REFERENCE
VARIABLE FREQUENCY OSCILLATOR
VREF UVLO
ONE-SHOT
STEERING FLIP-FLOP
ERROR
2.5V CLAMP
SOFT-START
FAULT DET/ LATCH
GND
HIGH SIDE DRIVE
LOW SIDE DRIVE
5001 CE136H
7005 STU16NB501
7006 STU16NB501
7020 BC517
7021 BC517
7007 BC327-25
7008 BC327-25
5002 CE423D
5004 CE423D
STTH2003C
TO P7 AUX_SUPPLY
77-100V
Vs_unsw
70-90V
TO P3 P7
FROM P7 AUX_SUPPLY
VS
VRS FEEDBACK
7010 TL431CZ
7011 TL431CZ
Vs Voltage Adj.
TO P3 PROTECTION
VRS
SOFTSTART CONTROL
CURRENT PROTECTION
7017 BC857BW
7018 BC847BW
7009 BC847BW
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
TO P7 AUX_SUPPLY
+15V
VB
DC_PROT
TO 0302 A7 SUPPLY & DC PROTECTION
6291 D4SBL20U
+9V_STBY
VSND_POS
GND_SND
VSND_NEG
PH-B
SHIELDING 3.3
HEATSINK
F003 5V / div DC 20µs / div
F005 200V / div DC 5µs / div
I007 2V / div DC 2µs / div
I083 100V / div DC 5µs / div
F004 5V / div DC 2µs / div
F038 200V / div DC 2µs / div
I057 5V / div DC 2µs / div
F014 = 2V4
F293 = 14V
F294 = -14V5
F801 = 17V
F815 = 78V
F816 = 78V
I027 = 2V6
I085 = 13V4
I090 = 4V2
I091 = 2V4
HOT GROUND
HOT
COLD
COLD GROUND
3122 123 6011.3
CL 26532055_006.eps
040703

Power Supply Panel (FM24 AB): Aux Supply

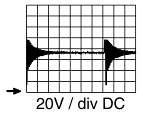

P 7
AUX_SUPPLY
VA-SUPPLY
+3V3-SUPPLY
VCC-SUPPLY
SEQUENCE DISCHARGE
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY . .
FROM P 6 LLC_SUPPLY
FROM P 3 PROTECTION
FROM P 2 FILTER_STBY
TO P 3 PROTECTION
TO P 2 P 3 FILTER_STBY
TO 0305 SC 8 CONTROL-FUNCTIONS
TO CN33 PDP (DISPLAY)
TO CN23 PDP (DISPLAY)
TO CN42 PDP (DISPLAY)
TO CN52 PDP (DISPLAY)
TO P 4 FANCONTROL
TO P 6 P 3
TO P 2 P 3
7112 TEA1507
7212 TEA1507
7260 L4973V
7120 TCET1102
7220 TCET1102
5220 CT296F
1110 T5A L 250V 19372
1200 T2AL 250V 19372
1260 750mA 60V 361
7130 TL431CZ
7121 TL431CZ
7227 TL431CZ
7230 L4940
Vs Va alignment
VA Adj.
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I

3122 123 6011.3

CL 26532055_007.eps
040703

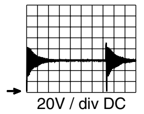
0305	A13
0323	E13
0333	D12
0342	G12
0352	G13
0392	H4
1110	B1
1200	G5
1260	A6
2021	I3
2050	G3
2054	C1
2055	E2
2058	H2
2059	I1
2061	I2
2110	A4
2111	D1
2112	D1
2113	E1
2114	E2
2117	D3
2118	C4
2121	D11
2122	D8
2123	D8
2126	E8
2133	E9
2138	D6
2203	I4
2205	I6
2210	I6
2211	I7
2212	H7
2217	I8
2218	H9
2219	H9
2222	H10
2223	G10
2224	G10
2225	H10
2226	G11
2227	G11
2228	H12
2230	I11
2231	I11
2232	I10
2260	B7
2261	A7
2262	A7
2263	B8
2264	B8
2265	A8
2266	B8
2267	B10
2268	A10
2269	B11
2270	A9
3051	G2
3053	H3
3054	B1
3058	G2
3062	H2
3083	H2
3084	I1
3085	I1
3086	I2
3087	I1
3088	I1
3110	C2
3111	C2
3112	D1
3113	D2
3114	D2
3115	D3
3116	D3
3117	D3
3118	D4
3119	D4
3120	D7
3121	D7
3122	D8
3123	D8
3124	D8
3125	E8
3126	E7
3127	E7
3128	E8
3129	C1
3130	D8
3131	D9
3132	E8
3133	C8
3134	D10
3135	E10
3136	E10
3138	D5
3139	D6
3140	E6
3141	E6
3142	E6
3146	C6
3147	D9
3148	A2
3149	B2
3150	A3
3151	A3
3152	B4
3200	G5
3201	G6
3202	H5
3203	I4
3204	I5
3205	I5
3212	H6
3213	I7
3214	I7
3216	H8
3217	I8
3218	I9
3219	I9
3224	G11
3225	H11
3226	G11
3228	F12
3240	G4
3241	H4
3260	B7
3261	B7
3262	A8
3264	A8
3265	A8
3268	B11
4268	B11
5120	C5
5200	G5
5220	G9
5224	G11
5225	G11
5260	A6
5268	B11
6050	G3
6054	E1
6055	E1
6061	I3
6086	I1
6111	D1
6112	E1
6113	D2
6117	C3
6120	D4
6123	D8
6133	B6
6142	G4
6202	I4
6205	I5
6206	F5
6211	I7
6213	I7
6216	H8
6224	G10
6225	H10
6230	I10
6232	I10
6260	B6
6267	B10
7050	G3
7052	I3
7058	I1
7059	I2
7110	C2
7111	C2
7112	C2
7117	C3
7120	C4
7121	D7
7130	E9
7134	E10
7140-A	D5
7140-B	D6
7142	D6
7143	A3
7144	A3
7145	A4
7200	G6
7202	H5
7212	H7
7217	H8
7220	F9
7227	H11
7230	I11
7260	A10
F102	C13
F106	F13
F107	G13
F110	A1
F111	C9
F113	G4
F114	I11
F115	A9
F116	I11
F118	E12
F119	E12
F120	F12
F121	E13
F122	C12
F123	E13
F124	C12
F125	E11
F126	E11
F127	E11
F128	E11
F129	F12
F130	D12
F131	D12
F132	F13
F133	F12
F134	F12
F135	G12
F136	G12
F137	G13
F138	H12
F139	H13
F140	G12
F240	H4
F241	H4
F260	A6
F261	B12
F262	B12
F263	B13
F264	B13
F265	A6
I101	B2
I102	C2
I103	C3
I104	C2
I105	C1
I106	C3
I107	D4
I108	D5
I109	D2
I110	D3
I111	D4
I112	D3
I113	E1
I114	E2
I115	D2
I116	D2
I117	D3
I118	C4
I119	D4
I120	D8
I121	D7
I122	E11
I123	D9
I124	D7
I125	D9
I126	D8
I127	D8
I128	D8
I129	E10
I131	E7
I132	E9
I133	C5
I134	C5
I135	C6
I140	A2
I141	A3
I142	A3
I143	A4
I152	C9
I153	D6
I154	D7
I155	D6
I156	D6
I157	E6
I158	C1
I159	E1
I160	E2
I161	G2
I200	G3
I201	H3
I202	I3
I203	I2
I204	I1
I207	I1
I208	H5
I209	H9
I210	G5
I211	G6
I212	G6
I213	H5
I214	H7
I215	H6
I216	H8
I217	H8
I218	H7
I219	I8
I220	H4
I221	I7
I222	I4
I224	I8
I225	I1
I230	F11
I231	F11
I232	G10
I233	G10
I234	G11
I235	G10
I236	H9
I237	H11
I238	H10
I240	I9
I241	I10
I243	I10
I259	A9
I261	A7
I262	A8
I263	A8
I264	B8
I265	B7
I266	B7
I267	A10
I268	B11
I269	B10
I270	B11
I271	A8

I105



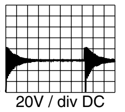
20V / div DC
20µs / div

I106



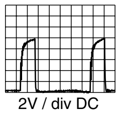
20V / div DC
20µs / div

I107



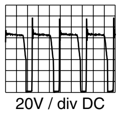
20V / div DC
20µs / div

I216



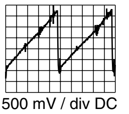
2V / div DC
2µs / div

I236



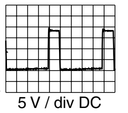
20V / div DC
5µs / div

I265



500 mV / div DC
2µs / div

I267

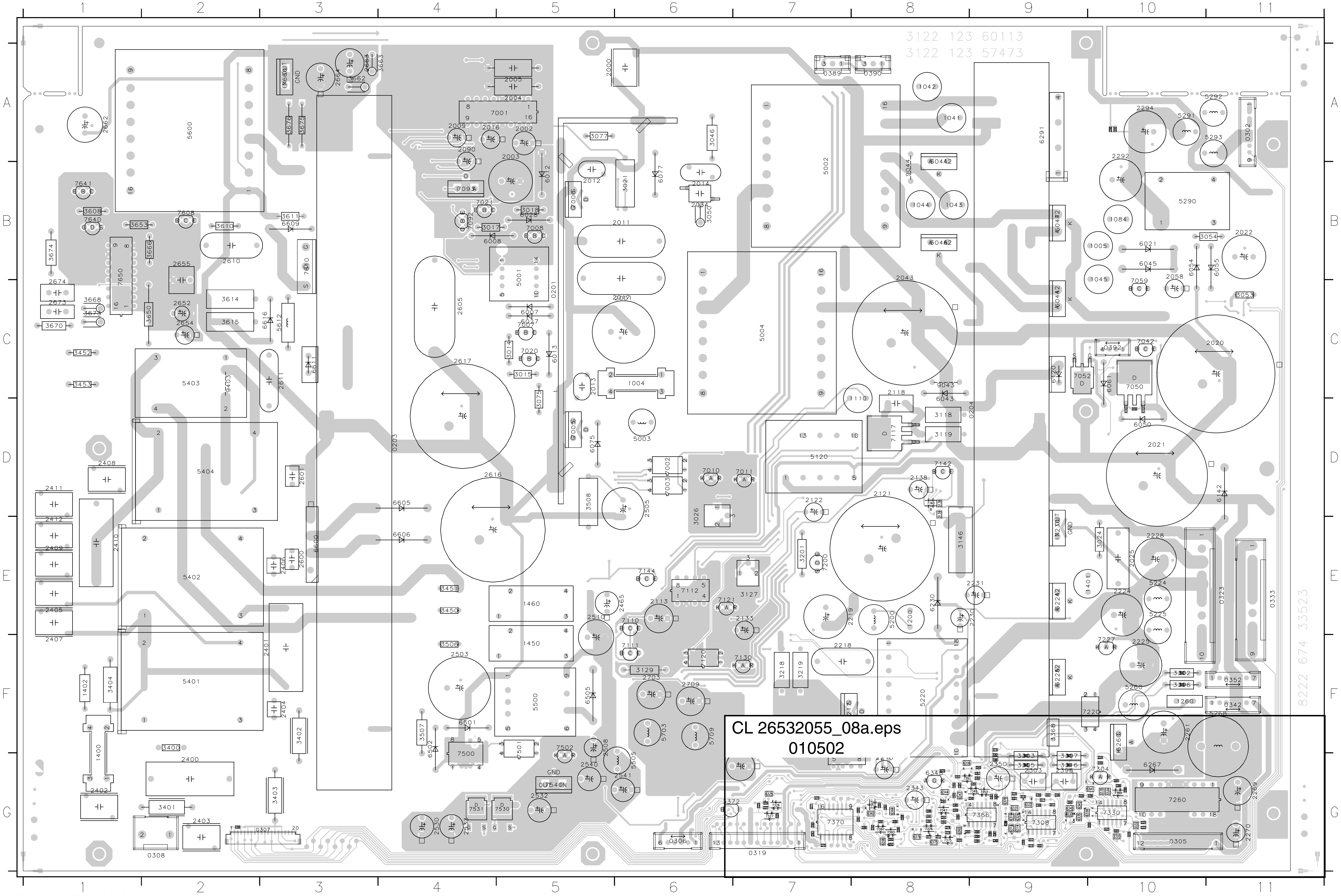


5 V / div DC
2µs / div

F116 = 12V4
F261 = 3V3
I101 = 76V
I124 = 10V6
I127 = 2V8
I128 = 3V9
I132 = 2V6
I200 = 97V

I201 = 78V3
I202 = 0V
I208 = 0V
I213 = 0V
I214 = 14V2
I220 = 9V
I261 = 17V3
I266 = 0V

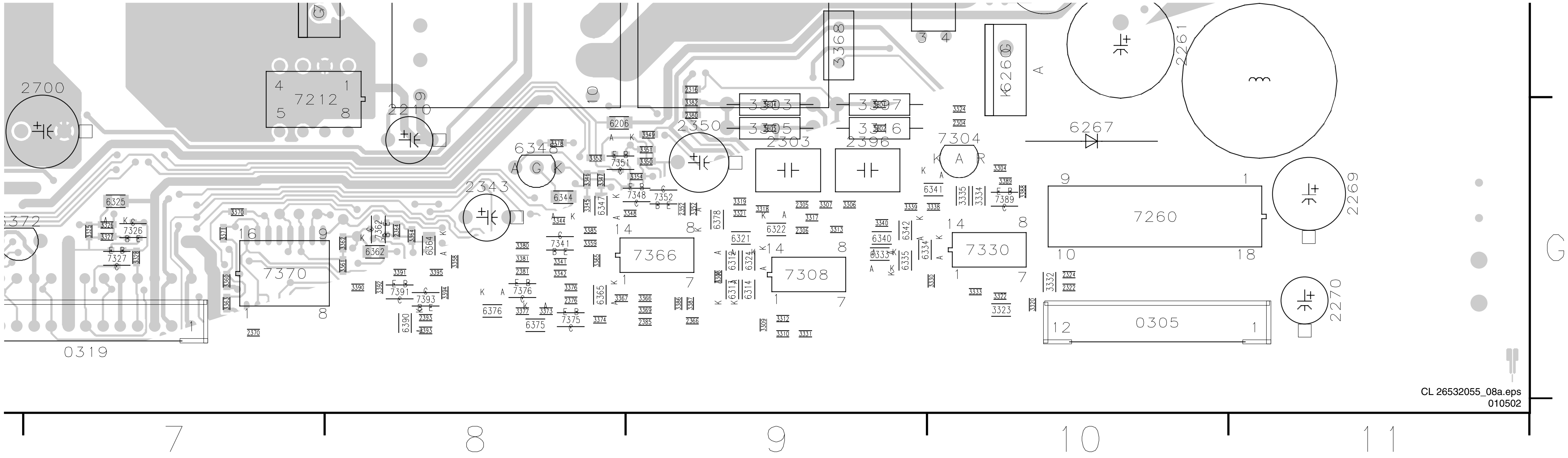
Layout Power Supply Panel (FM24 AB) (Top Side)


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
3122 123 60113
3122 123 57473
8222 674 33523
CL 26532055_08a.eps
010502
5600
5403
5404
5402
5401
5500
5002
5004
5120
5220
5290
5703
5709
5001
7001
7050
7052
7117
7260
7308
7330
7366
7370
7500
7501
7530
7531
7650
2000
2020
2021
2043
2121
2605
2610
2611
2616
2617
2400
2401
2410
1004
1400
1402
1450
1460
0203
0204
0319
0305
0306
0307
0308
0323
0333
GND

3122 123 6011.3

Layout Power Supply Panel (FM24 AB) (Part 1 Top Side)

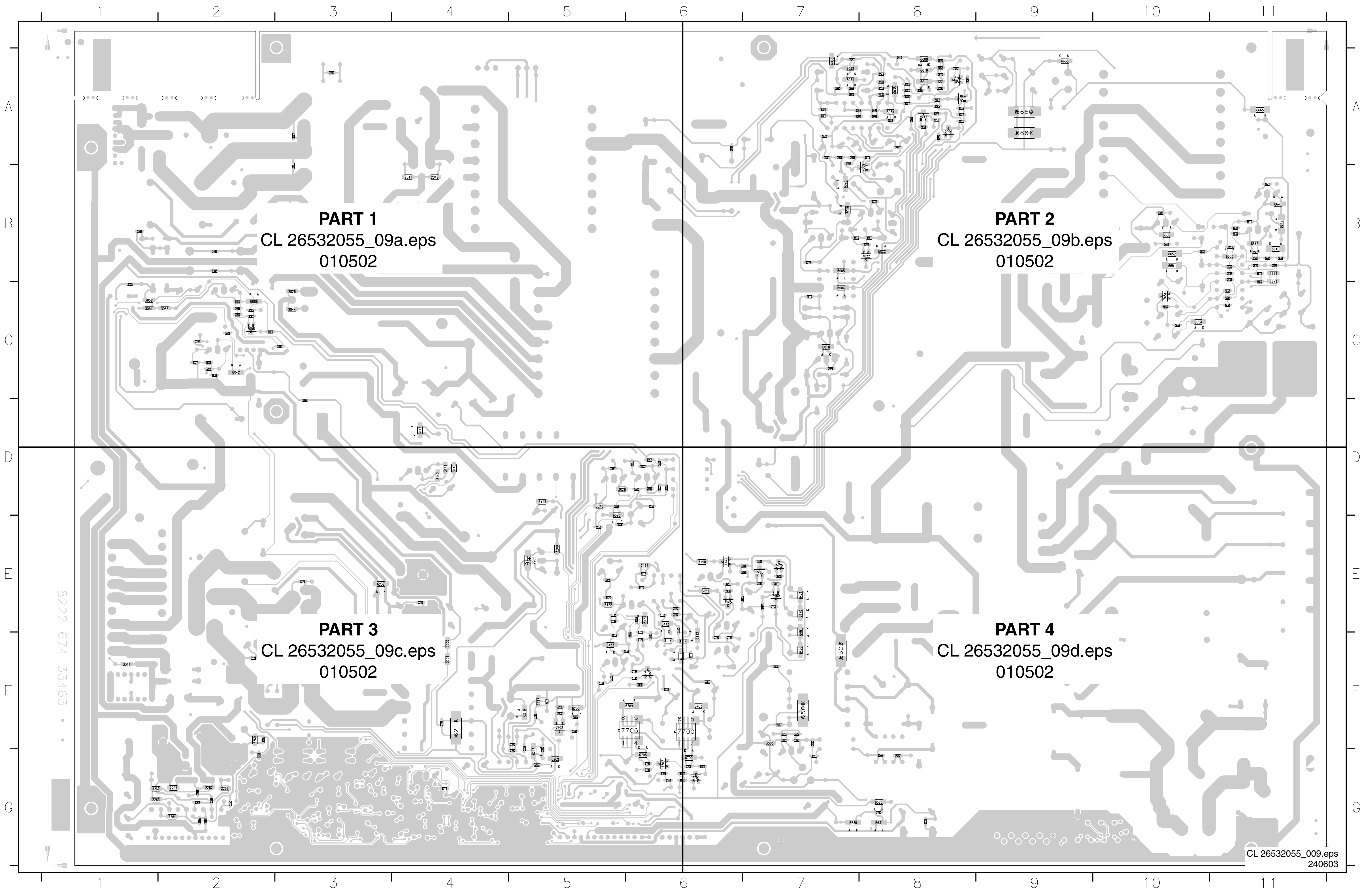
0201	C5
0203	D4
0204	D9
0302	A11
0305	G10
0306	G6
0307	G3
0308	G2
0319	G7
0323	E11
0333	E11
0342	F11
0352	F11
0389	A7
0390	A8
0392	C10
1004	C6
1005	B10
1041	A8
1042	A8
1043	B8
1044	B8
1045	B10
1084	B10
1110	D8
1200	E8
1260	F10
1400	G1
1401	E10
1402	F1
1450	F5
1460	E5
2000	A5
2001	C6
2002	A5
2003	A5
2004	A5
2005	A5
2009	A4
2011	B6
2012	B5
2013	C5
2014	B6
2016	A4
2017	C6
2020	C11
2021	D10
2022	B11
2025	E10
2034	B6
2043	B8
2050	D10
2058	B10
2090	A4
2113	E6
2118	C8
2121	D8
2122	D7
2133	E7
2138	D8
2210	G8
2218	F7
2219	E7
2224	E10
2225	F10
2228	E10
2230	E9
2231	E9
2261	F10
2269	G11
2270	G11
2290	A10
2292	A10
2294	A10
2303	G9
2304	G10
2305	G9
2306	G9
2316	F9
2322	G10
2324	G10
2343	G8
2350	G9
2352	G9
2364	G8
2366	G9
2370	G7
2376	G8
2380	G9
2381	G8
2385	G9
2393	G8
2396	G9
2400	G2
2401	F3
2402	G1
2403	G2
2404	F3
2405	E1
2406	E3
2407	F1
2408	D1
2409	E1
2410	E1
2411	D1
2412	E1
2465	E6
2503	F4
2505	D6
2508	F5
2510	E5
2530	G4
2532	G5
2533	G4
2540	G5
2541	G6
2600	E3
2601	D3
2605	C4
2610	B2
2611	C3
2616	D4
2617	C4
2652	C2
2654	C2
2655	B2
2662	A1
2663	A3
2664	A3
2673	C1
2674	C1
2700	F7
2703	F6
2709	F6
3014	C5
3015	C5
3017	B4
3018	B5
3021	B6
3024	E10
3026	E6
3046	A6
3050	B6
3053	C11
3054	B11
3075	D5
3077	A5
3118	D8
3119	D8
3127	E7
3129	F6
3138	D8
3139	D8
3146	E8
3201	E7
3218	F7
3219	F7
3292	A10
3302	F10
3303	G9
3304	G10
3305	G9
3306	G9
3307	G9
3308	G9
3309	G9
3310	G9
3312	G9
3313	G9
3316	G9
3317	G9
3318	G9
3319	G9
3320	G10
3321	G9
3322	G10
3323	G10
3324	G10
3325	G7
3326	G7
3327	G7
3328	G7
3330	G10
3331	G9
3332	G10
3333	G10
3334	G10
3335	G10
3338	G10
3339	G9
3340	G9
3341	G8
3342	G8
3344	G8
3345	G8
3346	G8
3347	G8
3348	G9
3349	G9
3350	G9
3351	G9
3352	G9
3353	G8
3354	G9
3358	G8
3359	G8
3360	G7
3361	G8
3362	G8
3363	G7
3364	G8
3365	G8
3366	G9
3367	G8
3368	F9
3369	G9
3370	G7
3371	G7
3372	G6
3373	G8
3374	G8
3376	G8
3377	G8
3378	G8
3380	G8
3381	G8
3382	G9
3385	G8
3386	G9
3387	G9
3388	G10
3389	G10
3390	G8
3391	G8
3392	G8
3393	G8
3394	G8
3395	G8
3396	F10
3397	G9
3400	F2
3401	G2
3402	F3
3403	G3
3404	F1
3450	E4
3451	E4
3452	C1
3453	C1
3506	F4
3507	F4
3508	D5
3608	B1
3610	B2
3611	B3
3614	C2
3615	C2
3650	C2
3653	B1
3662	A3
3663	A4
3666	B2
3668	C1
3670	C1
3673	C1
3674	B1
3675	A3
3676	A3
3800	F10
3801	G9
3802	G9
3803	F10
3804	G9
3805	G9
4300	G2
5001	B5
5002	B7
5003	D6
5004	C7
5120	D7
5200	E8
5220	F8
5224	E10
5225	E10
5260	F10
5268	F11
5290	B10
5291	A10
5292	A11
5293	A11
5401	F2
5402	E2
5403	C2
5404	D2
5500	F5
5505	G6
5600	A2
5612	C3
5703	F6
5709	F6
6007	C5
6008	B4
6012	B5
6013	C5
6021	B10
6027	C5
6028	B5
6041	B8
6043	D8
6044	C9
6045	B10
6046	B8
6047	B9
6050	D10
6054	B10
6055	B11
6061	C10
6075	D5
6077	B6
6120	C9
6142	D11
6206	G8
6224	E9
6225	F9
6230	E8
6260	F10
6267	G10
6291	A9
6312	G9
6313	G9
6314	G9
6321	G9
6322	G9
6324	G9
6325	G7
6333	G9
6334	G9
6335	G9
6340	G9
6341	G10
6342	G9
6344	G8
6347	G8
6348	G8
6362	G8
6364	G8
6365	G8
6375	G8
6376	G8
6378	G9
6390	G8
6501	F4
6502	F4
6505	F5
6600	E3
6605	D4
6606	E4
6609	B3
6611	C3
6616	C3
7001	A5
7002	D6
7003	D6
7005	D5
7006	B5
7007	C5
7008	B5
7010	D6
7011	D7
7020	C5
7021	B4
7042	C10
7050	C10
7052	C9
7059	C10
7092	B4
7093	B4
7110	E6
7111	F6
7112	E6
7117	D8
7120	F6
7121	E6
7130	F7
7140	D8
7142	D8
7144	E6
7200	E7
7212	G7
7217	F7
7220	F10
7227	F10
7230	E9
7260	G10
7304	G10
7308	G9
7326	G7
7327	G7
7330	G10
7341	G8
7348	G9
7351	G8
7352	G9
7362	G8
7366	G9
7370	G7
7375	G8
7376	G8
7389	G10
7391	G8
7393	G8
7500	G4
7501	F5
7502	F5
7530	G5
7531	G4
7540	G5
7608	B2
7610	B3
7640	B1
7641	B1
7650	B1
7660	A3
9043	C8
9044	B8
9403	C2



CL 26532055_08a.eps
010502

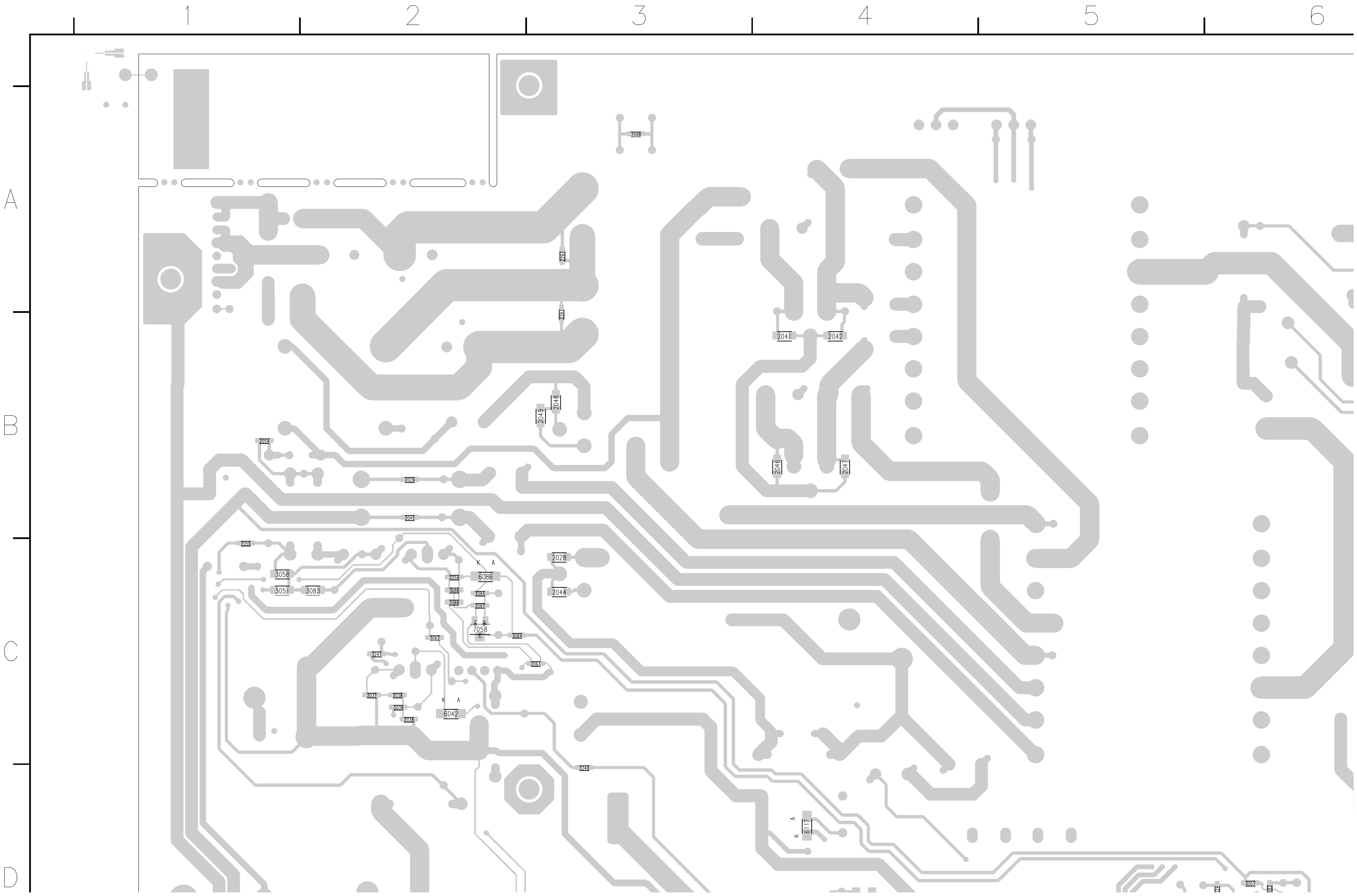
Layout Power Supply Panel (FM24 AB) (Overview Bottom Side)

2006	A7
2007	A8
2008	A8
2010	A8
2015	A8
2023	D6
2024	D6
2026	A8
2027	A8
2028	C3
2029	B2
2030	D6
2032	A8
2033	A8
2035	A6
2036	A8
2038	C2
2040	B8
2041	B4
2042	B4
2044	C3
2045	B2
2046	B4
2047	B4
2048	B3
2049	B3
2054	B1
2055	C1
2059	C2
2061	C3
2110	E6
2111	F6
2112	E6
2114	F6
2117	E6
2123	F6
2126	F6
2203	F5
2205	E5
2211	F4
2212	F5
2217	F5
2222	F3
2223	E3
2226	F2
2227	F2
2232	E4
2260	F2
2262	G2
2263	G1
2264	G2
2265	G2
2266	G2
2267	G2
2268	G2
2291	B3
2293	A3
2504	G8
2507	F7
2509	F7
2511	F7
2512	F7
2513	G8
2608	B11
2612	B10
2613	B10
2640	B11
2641	B11
2642	B11
2651	B11
2653	B11
2656	C11
2665	C11
2666	B10
2670	B11
2671	B11
2672	B11
3003	A7
3004	A7
3005	A7
3006	A8
3007	A8
3008	A8
3009	A8
3010	A8
3011	A8
3012	A8
3013	A8
3016	C7
3019	B7
3020	A8
3022	D6
3023	D6
3025	E5
3027	A8
3028	D5
3029	D6
3030	D6
3031	D5
3032	E5
3033	B7
3034	D6
3037	C2
3038	C2
3039	C2
3040	D5
3041	D5
3042	A7
3043	A8
3044	A7
3045	A7
3047	A7
3048	A8
3049	A8
3051	C1
3056	A7
3057	D6
3058	C1
3062	C2
3064	A8
3065	A8
3066	A8
3067	A8
3070	A7
3071	A8
3076	C7
3078	B8
3080	A8
3081	B8
3083	C2
3084	C2
3085	C2
3086	C2
3087	C2
3088	C2
3090	A8
3091	A8
3092	A8
3093	A8
3095	A7
3096	A7
3097	A7
3110	F6
3111	F6
3112	E6
3113	E6
3114	F6
3115	E6
3116	E6
3117	E6
3120	F6
3121	F6
3122	E5
3123	D5
3124	E5
3125	E5
3126	E5
3128	E6
3130	F6
3131	F5
3132	E5
3133	F5
3134	F6
3135	F6
3136	F6
3140	D4
3141	D4
3142	D4
3147	F5
3148	E7
3149	E7
3150	E6
3151	E6
3152	E6
3200	E5
3202	F5
3203	G5
3204	F5
3205	F5
3212	G5
3213	G5
3214	F5
3216	F5
3217	F5
3224	F2
3225	F2
3226	F2
3228	F3
3240	D3
3241	C2
3260	F2
3261	G2
3262	G1
3264	G2
3265	G2
3268	G2
3300	F4
3301	F4
3311	F1
3343	G4
3460	E7
3461	E7
3463	E7
3465	E6
3467	E7
3469	E7
3470	E7
3501	G7
3502	F7
3503	F7
3504	F7
3505	F7
3520	G8
3530	G8
3639	B11
3640	B11
3641	B11
3642	B11
3651	B11
3652	C11
3654	C10
3655	C10
3664	B11
3665	C11
3667	B11
3671	B11
3700	G6
3701	G6
3702	G6
3703	G6
3706	G6
3707	G6
3708	G6
3709	G6
3999	A3
4268	G2
5704	F6
5710	F6
6004	C7
6005	B7
6009	A8
6010	A8
6011	A8
6018	C7
6019	B7
6022	B8
6023	E5
6031	A7
6032	A7
6033	A7
6034	A8
6035	A8
6042	C2
6086	C2
6095	B7
6111	F6
6112	F6
6113	E6
6117	D4
6123	E6
6133	F5
6202	G5
6205	F5
6211	F4
6213	G5
6216	F5
6232	E3
6460	F7
6461	E7
6470	E7
6471	E7
6503	F7
6504	F7
6510	F9
6511	F9
6512	F9
6513	F9
6520	G8
6530	G7
6531	G8
6608	B10
6640	B11
6641	B11
6642	B11
6643	B11
6651	B10
6652	B10
6653	B11
6654	C10
6660	A9
6661	A9
6663	A9
6665	A11
6700	G6
6703	F6
6706	G6
6709	F6
7009	B8
7017	A8
7018	A8
7022	B8
7058	C2
7090	A8
7091	A8
7134	F6
7143	E6
7145	E6
7202	F5
7460	E7
7465	E7
7470	E7
7654	C10
7700	F6
7701	G6
7706	F6
7707	G6



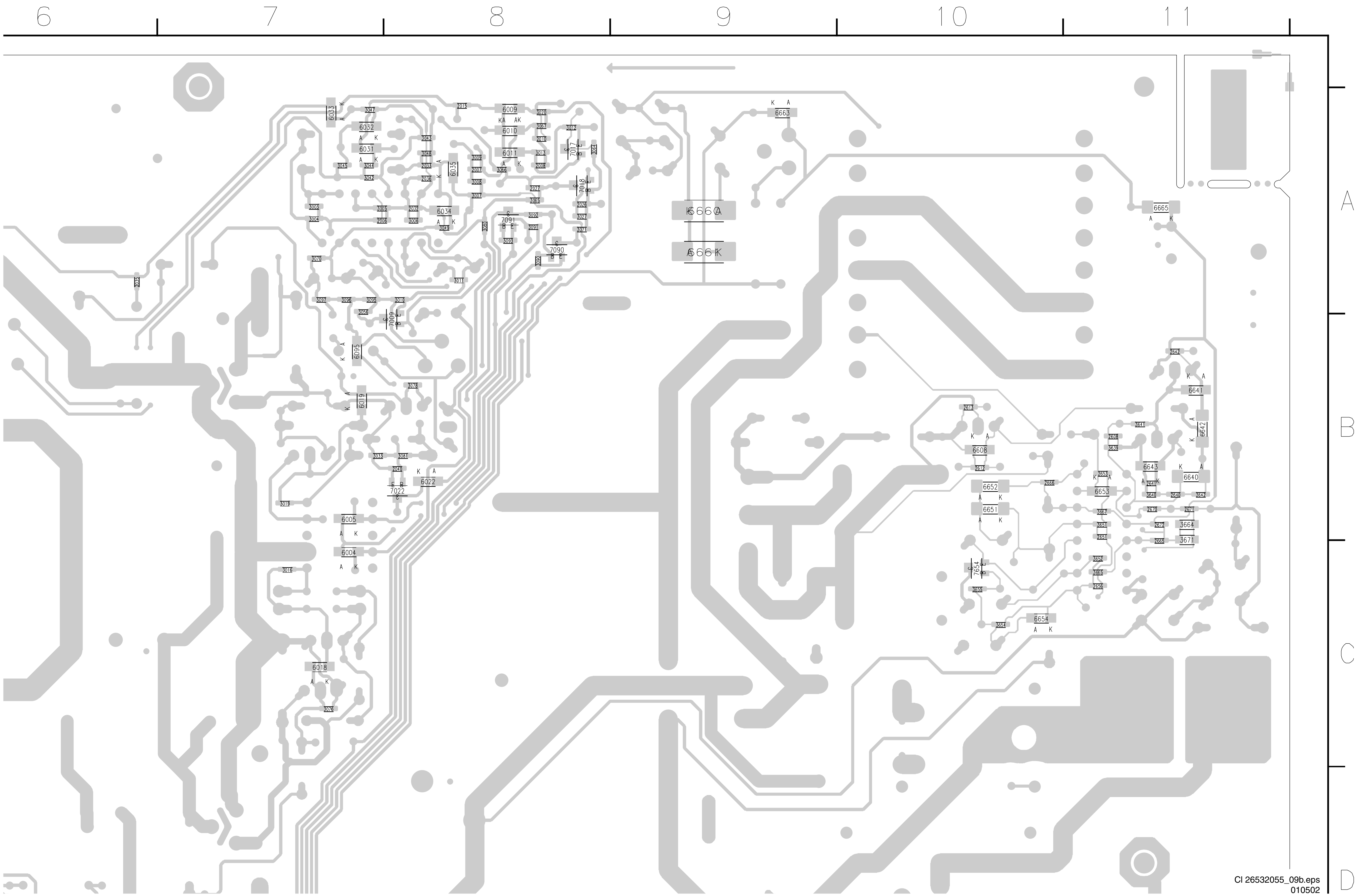
3122 123 6011.3

Layout Power Supply Panel (FM24 AB) (Part 1 Bottom Side)


1
2
3
4
5
6
A
B
C
D
2041
2042
2046
2047
2048
2049
2028
2044
3058
3051
3083
K
A
6086
7058
6042
6117

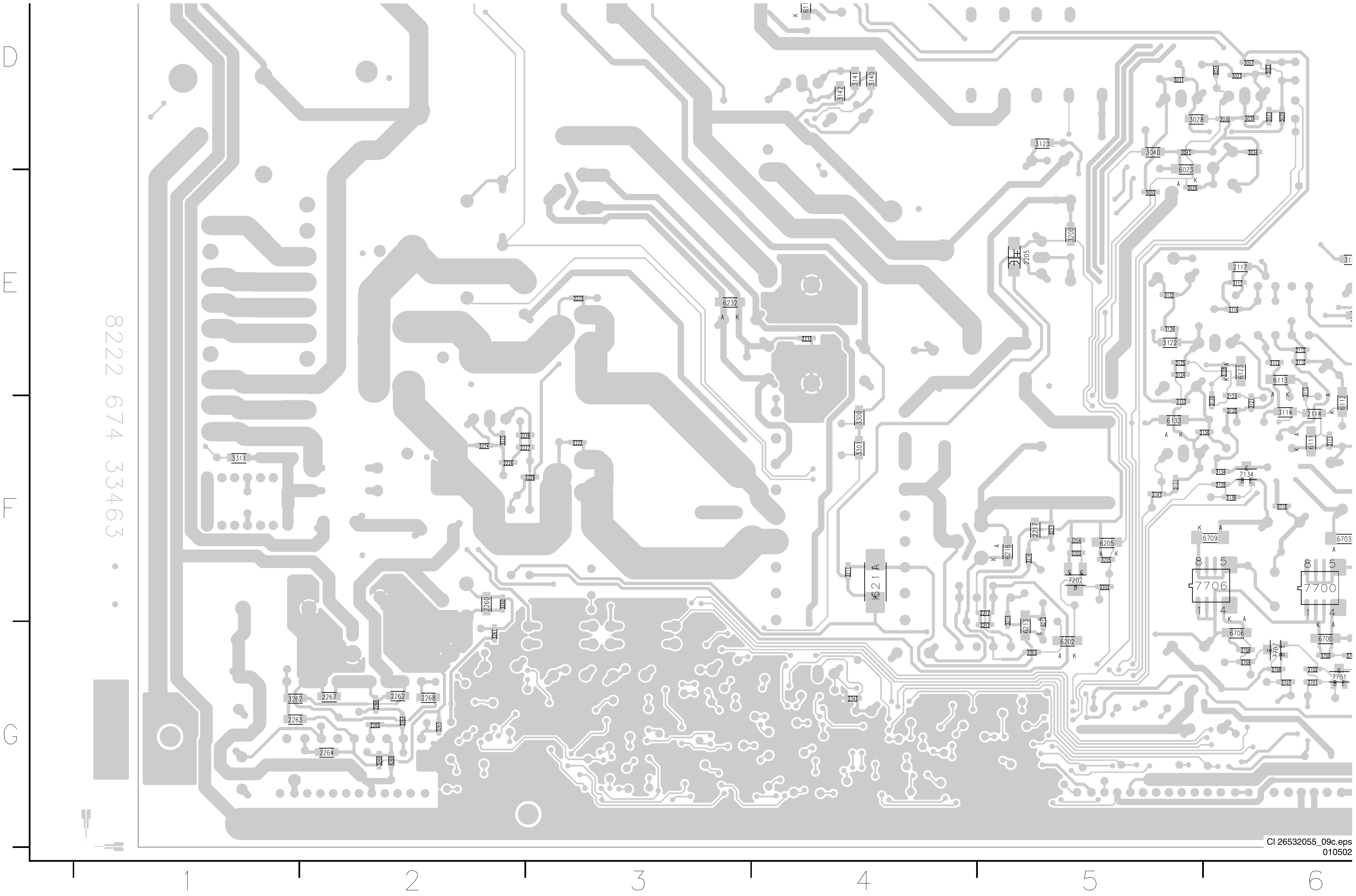
CI 26532055_09a.eps
010502

Layout Power Supply Panel (FM24 AB) (Part 2 Bottom Side)

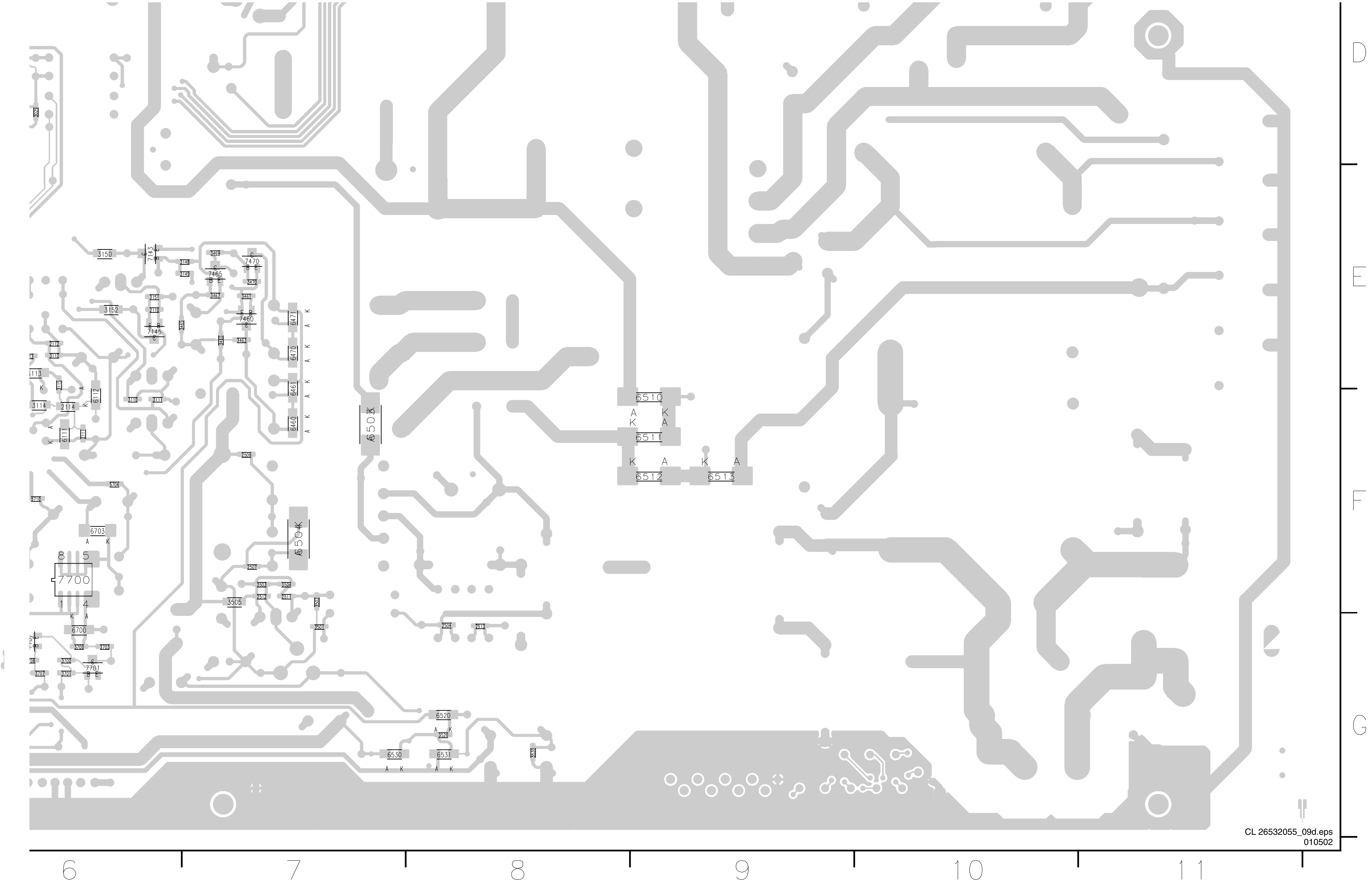

6
7
8
9
10
11
A
B
C
D
6033
6032
6031
6009
6010
6011
6035
6034
7091
7090
7017
7018
6663
6660
6661
6665
7009
6095
6019
6022
7022
6005
6004
6018
6641
6642
6608
6643
6640
6652
6653
6651
3664
3671
7654
6654

CI 26532055_09b.eps
010502

Layout Power Supply Panel (FM24 AB) (Part 3 Bottom Side)

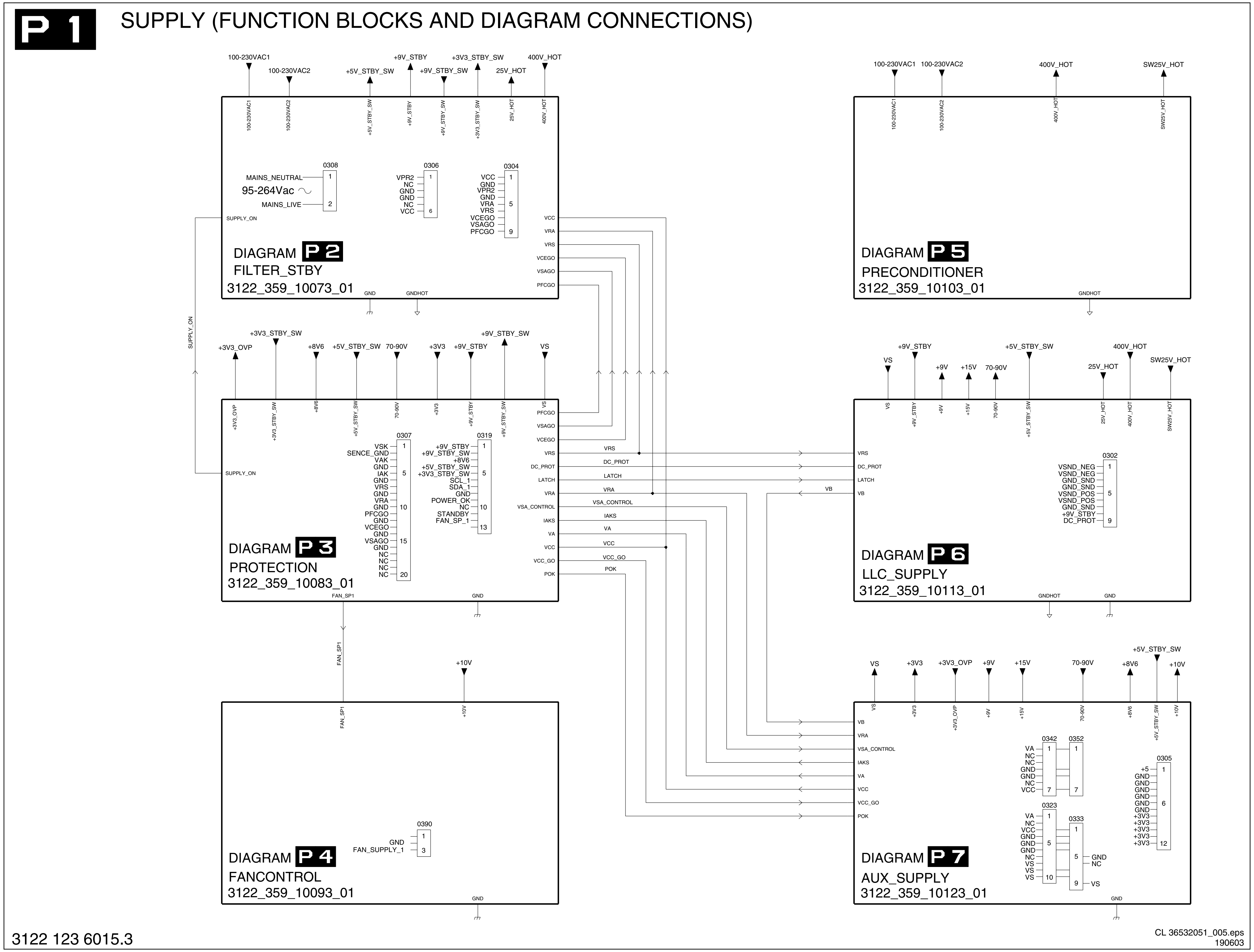

D
E
F
G
1
2
3
4
5
6
8222 674 33463
3311
3262
2267
2262
2268
2263
2264
2260
6232
3141
3140
3142
3123
3200
2205
3300
3301
6216
2217
6205
7202
6213
6202
3040
6023
3028
2117
3122
6133
6123
6113
3114
2114
6112
6111
7134
6709
6703
7706
7700
6706
6700
7701
CI 26532055_09c.eps
010502

Layout Power Supply Panel (FM24 AB) (Part 4 Bottom Side)

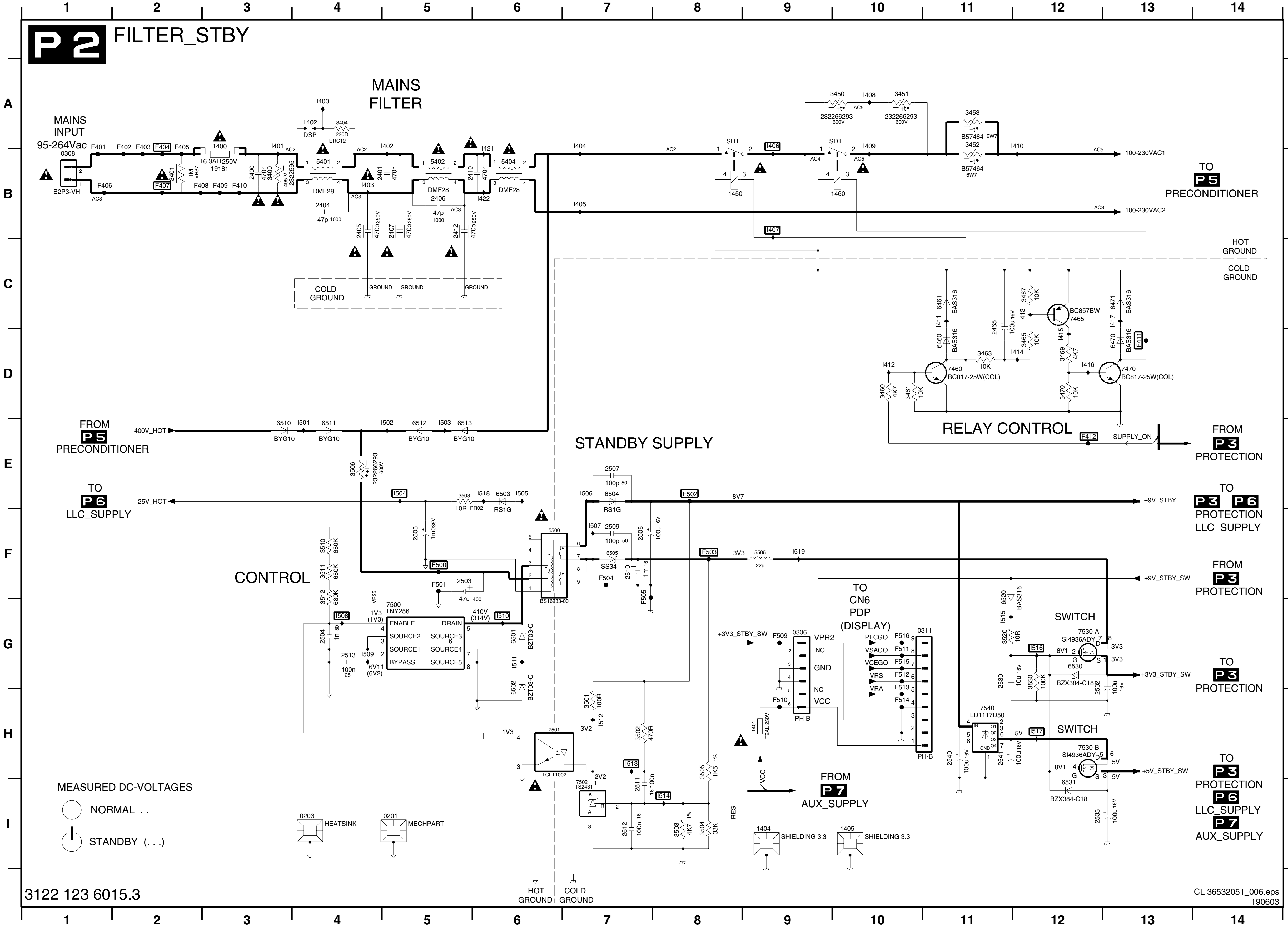

D
E
F
G
6
7
8
9
10
11
3150
7143
7470
7465
3152
7460
7145
6471
6470
6461
6460
6510
6511
6512
6513
6501
6504
6703
7700
6700
7701
3505
6520
6530
6531
6112
6111
3113
3114
2114

CL 26532055_09d.eps
010502

Power Supply Panel (FM33 AA): Function Blocks and Diagram Connections


P 1
SUPPLY (FUNCTION BLOCKS AND DIAGRAM CONNECTIONS)
DIAGRAM P 2
FILTER_STBY
3122_359_10073_01
100-230VAC1
100-230VAC2
+5V_STBY_SW
+9V_STBY
+9V_STBY_SW
+3V3_STBY_SW
25V_HOT
400V_HOT
0308
MAINS_NEUTRAL
95-264Vac
MAINS_LIVE
0306
VPR2
NC
GND
GND
NC
VCC
0304
VCC
GND
VPR2
GND
VRA
VRS
VCEGO
VSAGO
PFCGO
SUPPLY_ON
GND
GNDHOT
DIAGRAM P 5
PRECONDITIONER
3122_359_10103_01
SW25V_HOT
DIAGRAM P 3
PROTECTION
3122_359_10083_01
+3V3_OVP
+8V6
70-90V
+3V3
VS
0307
VSK
SENCE_GND
VAK
IAK
VRS
VRA
VCEGO
VSAGO
0319
+8V6
SCL_1
SDA_1
POWER_OK
STANDBY
FAN_SP_1
DC_PROT
LATCH
VSA_CONTROL
IAKS
VA
VCC_GO
POK
FAN_SP1
DIAGRAM P 6
LLC_SUPPLY
3122_359_10113_01
+9V
+15V
VB
0302
VSND_NEG
GND_SND
VSND_POS
DC_PROT
DIAGRAM P 4
FANCONTROL
3122_359_10093_01
+10V
0390
FAN_SUPPLY_1
DIAGRAM P 7
AUX_SUPPLY
3122_359_10123_01
0342
0352
0323
0333
0305
+5
3122 123 6015.3
CL 36532051_005.eps
190603

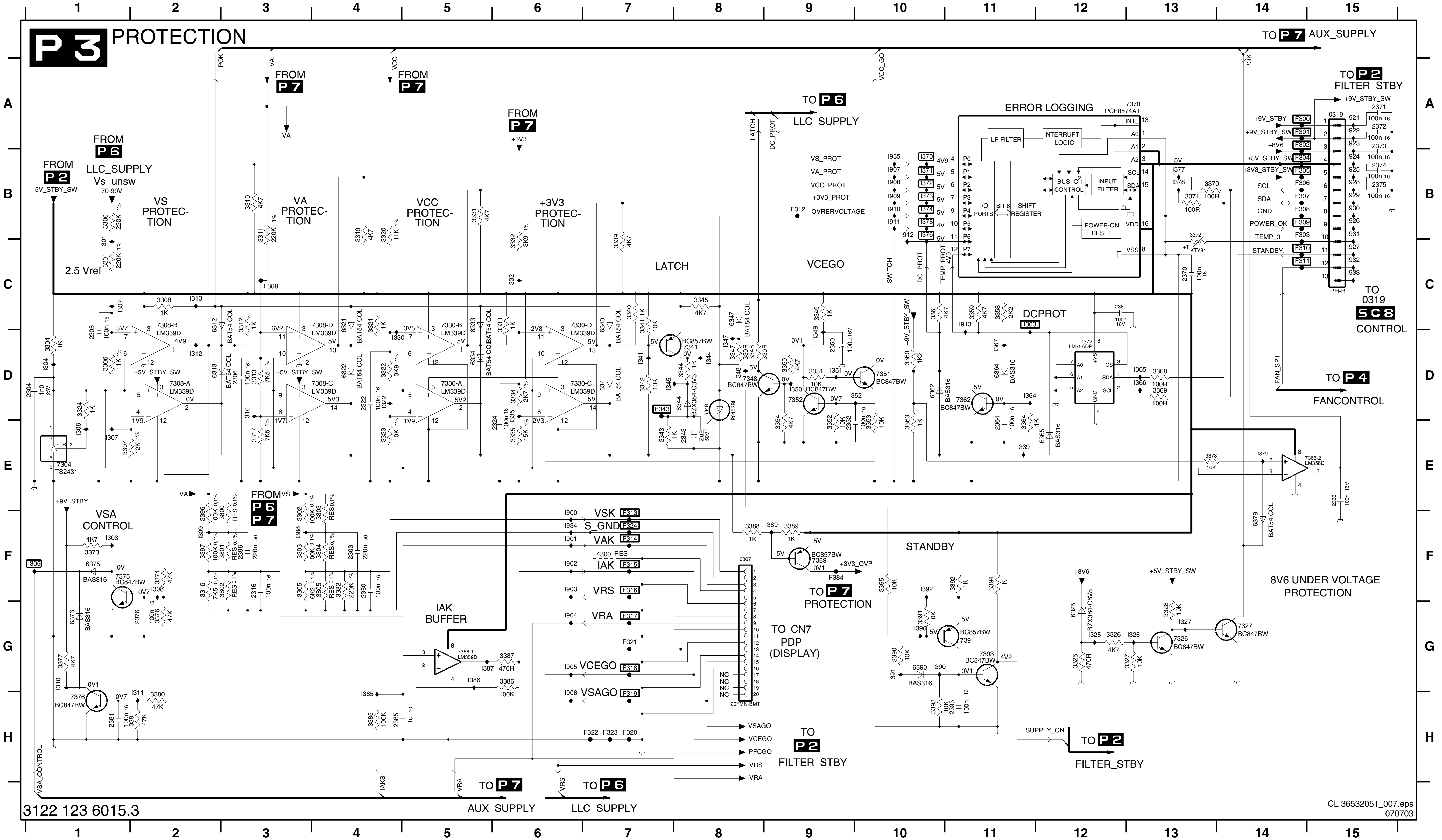
Power Supply Panel (FM33 AA): Filter Standby


P2
FILTER_STBY
MAINS FILTER
MAINS INPUT
95-264Vac
0308
B2P3-VH
1400
T6.3AH 250V
19181
DMF28
5401
5402
5404
SDT
1450
1460
3450
3451
232266293
600V
3452
3453
B57464
6W7
100-230VAC1
100-230VAC2
TO
P5
PRECONDITIONER
HOT GROUND
COLD GROUND
BC857BW
7465
7460
BC817-25W(COL)
7470
BC817-25W(COL)
BAS316
RELAY CONTROL
SUPPLY_ON
FROM
P3
PROTECTION
FROM
P5
PRECONDITIONER
400V_HOT
BYG10
STANDBY SUPPLY
TO
P6
LLC_SUPPLY
25V_HOT
RS1G
5500
BS16233-00
SS34
8V7
3V3
+9V_STBY
P3 P6
PROTECTION
LLC_SUPPLY
+9V_STBY_SW
FROM
P3
PROTECTION
CONTROL
7500
TNY256
ENABLE
DRAIN
SOURCE2
SOURCE3
SOURCE1
SOURCE4
BYPASS
SOURCE5
410V (314V)
BZT03-C
TO CN6 PDP (DISPLAY)
+3V3_STBY_SW
0306
VPR2
NC
GND
NC
VCC
PH-B
0311
PFCGO
VSAGO
VCEGO
VRS
VRA
SWITCH
7530-A
SI4936ADY
BZX384-C18
TO
P3
PROTECTION
7540
LD1117D50
5V
7530-B
SI4936ADY
+5V_STBY_SW
TO
P3
PROTECTION
P6
LLC_SUPPLY
P7
AUX_SUPPLY
FROM
P7
AUX_SUPPLY
7501
TCLT1002
7502
TS2431
1V3
3V2
2V2
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. .)
0203
HEATSINK
0201
MECHPART
1404
SHIELDING 3.3
1405
SHIELDING 3.3
3122 123 6015.3
HOT GROUND
COLD GROUND
CL 36532051_006.eps
190603

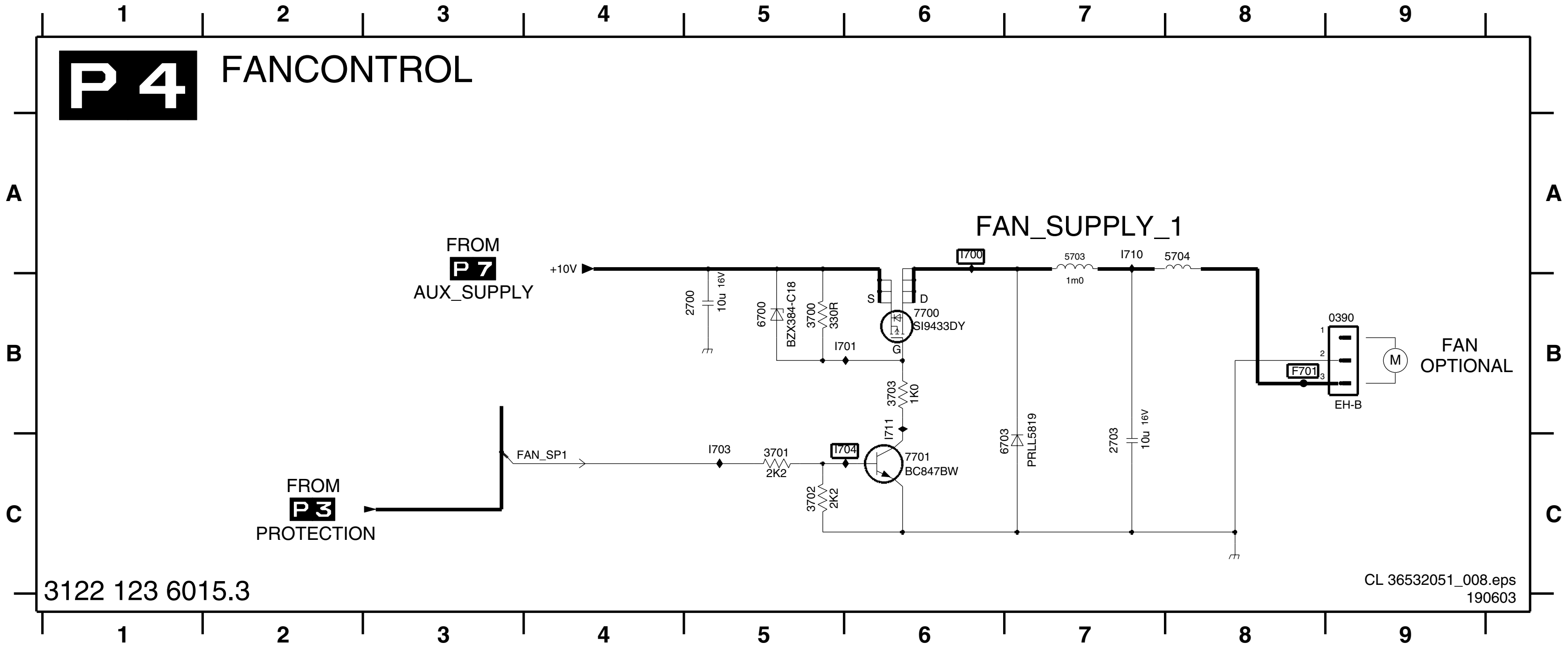
0201	I5
0203	I4
0306	G9
0308	B1
0311	G10
1400	B3
1401	H9
1402	A4
1404	I9
1405	I10
1450	B8
1460	B10
2400	B3
2401	B4
2404	B4
2405	B4
2406	B5
2407	B5
2410	B5
2412	B5
2465	C11
2503	F5
2504	G4
2505	F5
2507	E7
2508	F7
2509	F7
2510	F7
2511	I7
2512	I7
2513	G4
2530	G11
2532	G12
2533	I12
2540	H11
2541	H11
3400	B3
3401	B2
3404	A4
3450	A10
3451	A10
3452	A11
3453	A11
3460	D10
3461	D10
3463	D11
3465	D12
3467	C12
3469	D12
3470	D12
3501	H7
3502	H7
3503	I8
3504	I8
3505	H8
3506	E4
3508	E5
3510	F4
3511	F4
3512	F4
3520	G11
3530	G12
5401	B4
5402	B5
5404	B6
5500	F6
5505	F9
6460	D11
6461	C11
6470	D13
6471	C13
6501	G6
6502	G6
6503	E6
6504	E7
6505	F7
6510	E3
6511	E4
6512	E5
6513	E5
6520	F11
6530	G12
6531	I12
7460	D11
7465	C12
7470	D13
7500	G5
7501	H6
7502	I7
7530-A	G12
7530-B	H12
7540	H11
F401	B1
F402	B2
F403	B2
F404	B2
F405	B2
F406	B1
F407	B2
F408	B2
F409	B3
F410	B3
F411	D13
F412	E12
F500	F5
F501	F5
F502	E8
F503	F8
F504	F7
F505	F7
F509	G9
F510	H9
F511	G10
F512	G10
F513	H10
F514	H10
F515	G10
F516	G10
I400	A4
I401	A3
I402	A5
I403	B4
I404	A7
I405	B7
I406	A9
I407	B9
I408	A10
I409	A10
I410	A12
I411	C11
I412	D10
I413	C12
I414	D12
I415	D12
I416	D12
I417	C13
I421	A6
I422	B6
I501	E4
I502	E5
I503	E5
I504	E5
I505	E6
I506	E7
I507	F7
I508	G4
I509	G4
I510	G6
I511	G6
I512	H7
I513	H7
I514	I8
I515	G11
I516	G12
I517	H12
I518	E6
I519	F9

Power Supply Panel (FM33 AA): Protection

0307	F8
0319	A15
2303	F4
2304	D1
2305	D1
2306	D3
2316	F3
2322	D4
2324	E6
2343	E8
2350	D9
2352	E9
2364	E11
2366	E15
2369	C12
2370	C13
2371	A15
2372	A15
2373	A15
2374	B15
2375	B15
2376	G2
2380	F4
2381	H1
2385	H4
2393	H11
2396	F3
3300	B1
3301	C1
3302	F3
3303	F3
3304	D1
3305	F3
3306	D1
3307	E1
3308	C2
3310	B3
3311	B3
3312	C3
3313	D3
3316	F2
3317	E3
3319	B4
3320	B4
3321	C4
3322	D4
3323	E4
3324	D1
3325	G12
3326	G12
3327	G13
3328	G13
3331	B5
3332	C6
3333	C6
3334	D6
3335	E6
3339	C7
3340	C7
3341	C7
3342	D7
3343	E7
3344	D8
3345	C8
3347	D8
3348	D8
3349	C9
3350	D9
3351	D9
3352	E9
3353	E10
3354	E9
3358	C11
3359	C11
3360	D10
3361	C10
3363	E10
3364	E11
3368	D13
3369	D13
3370	B13
3371	B13
3372	B13
3373	F1
3374	F2
3376	G2
3377	G1
3378	E13
3380	H2
3381	H2
3382	F4
3385	H4
3386	G6
3387	G6
3388	F8
3389	F9
3390	G10
3391	G10
3392	F11
3393	H10
3394	F11
3395	F10
3396	F2
3397	F2
3800	F3
3801	F3
3802	F3
3803	F4
3804	F4
3805	F4
4300	F7
6312	C2
6313	D2
6321	C4
6322	D4
6325	G12
6333	C5
6334	D5
6340	C7
6341	D7
6344	D8
6347	C8
6348	D8
6362	D10
6364	D11
6365	E12
6375	F1
6376	G1
6378	F14
6390	G10
7304	E1
7308-A	D2
7308-B	C2
7308-C	D4
7308-D	C4
7326	G13
7327	G14
7330-A	D5
7330-B	C5
7330-C	D6
7330-D	C6
7341	D8
7348	D8
7351	D10
7352	D9
7362	D11
7366-1	G5
7366-2	E14
7370	A13
7372	D12
7375	F1
7376	H1
7389	F9
7391	G11
7393	G11
F300	A14
F301	A14
F302	A14
F303	B14
F304	B14
F305	B14
F306	B14
F307	B14
F308	B14
F309	B14
F310	C14
F311	C14
F312	B9
F313	F7
F314	F7
F315	F7
F316	F7
F317	G7
F318	G7
F319	H7
F320	H7
F321	G7
F322	H7
F323	H7
F324	F7
F343	D7
F368	C3
F384	F9
I301	C1
I302	C1
I303	F1
I304	D1
I305	F1
I306	E1
I307	E1
I308	F2
I309	F2
I310	G1
I311	H2
I312	D2
I313	C2
I316	D3
I322	D4
I325	G12
I326	G13
I327	G13
I330	D4
I332	C6
I335	D6
I339	E11
I341	D7
I344	D8
I345	D7
I347	D8
I348	D8
I349	D9
I350	D9
I351	D9
I352	D10
I363	C11
I364	D11
I365	D13
I366	D13
I367	D11
I370	B10
I371	B10
I372	B10
I373	B10
I374	B10
I375	B10
I376	B10
I377	B13
I378	B13
I379	E14
I385	H4
I386	G5
I387	G5
I388	F3
I389	F9
I390	G10
I391	G10
I392	F10
I396	G10
I900	F6
I901	F6
I902	F6
I903	F6
I904	G6
I905	G6
I906	H6
I907	B10
I908	B10
I909	B10
I910	B10
I911	B10
I912	B10
I913	C11
I921	A15
I922	A15
I923	A15
I924	B15
I925	B15
I926	B15
I927	C15
I928	B15
I929	B15
I930	B15
I931	B15
I932	C15
I933	C15
I934	F6
I935	B10

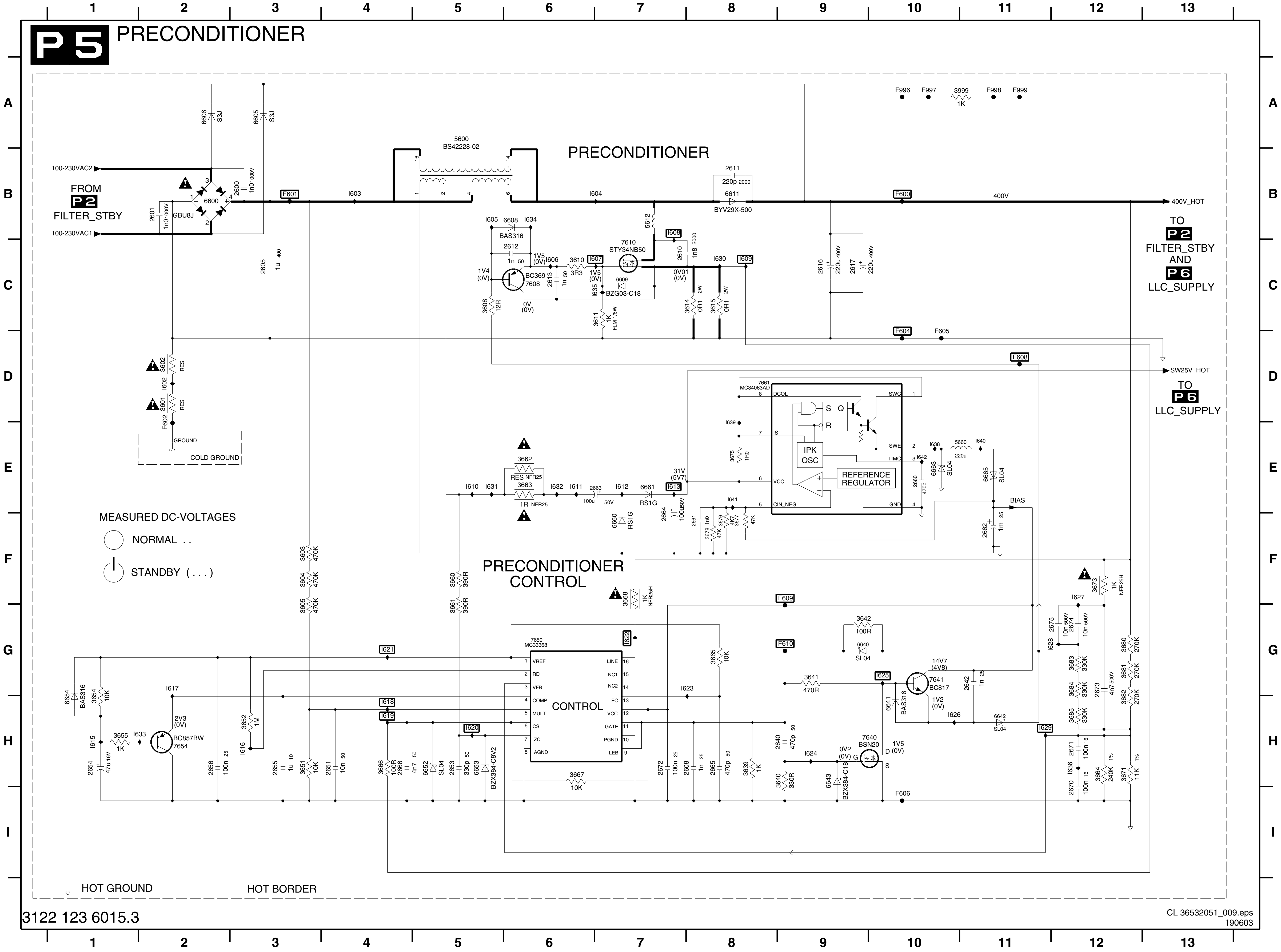

P 3 PROTECTION
TO P 7 AUX_SUPPLY
POK
VA
VCC
FROM P 7
TO P 6 LLC_SUPPLY
VCC_GO
TO P 2 FILTER_STBY
ERROR LOGGING
7370 PCF8574AT
LP FILTER
INTERRUPT LOGIC
I/O PORTS
BIT 8
SHIFT REGISTER
BUS CONTROL
INPUT FILTER
POWER-ON RESET
INT A0 A1 A2 SCL SDA VDD VSS
FROM P 2 +5V_STBY_SW
FROM P 6 LLC_SUPPLY Vs_unsw 70-90V
VS PROTEC-TION
VA PROTEC-TION
VCC PROTEC-TION
+3V3 PROTEC-TION
+3V3
LATCH
VCEGO
DC_PROT
VS_PROT
VA_PROT
VCC_PROT
+3V3_PROT
OVERVOLTAGE
SWITCH
TEMP_PROT
2.5 Vref
7308-B LM339D
7308-A LM339D
7308-D LM339D
7308-C LM339D
7330-B LM339D
7330-A LM339D
7330-D LM339D
7330-C LM339D
BAT54 COL
7304 TS2431
BC857BW 7341
BC847BW 7348
BC847BW 7352
BC847BW 7351
DCPROT
7372 LM75ADP
BC847BW 7362
BAS316
+9V_STBY +9V_STBY_SW +8V6 +5V_STBY_SW +3V3_STBY_SW
SCL SDA GND POWER_OK TEMP_3 STANDBY
0319 PH-B
TO 0319 SC8 CONTROL
KTY81
TO P 4 FANCONTROL
FAN_SP1
7366-2 LM358D
VSA CONTROL
+9V_STBY
7375 BC847BW
7376 BC847BW
FROM P 6 P 7
VSK S_GND VAK IAK VRS VRA VCEGO VSAGO
4300 RES
0307 20FMN-BMT
TO CN7 PDP (DISPLAY)
IAK BUFFER
7366-1 LM358D
7389 BC857BW
+3V3_OVP
TO P 7 PROTECTION
STANDBY
7391 BC857BW
7393 BC847BW
SUPPLY_ON
TO P 2 FILTER_STBY
+8V6
BZX384-C6V8
7326 BC847BW
7327 BC847BW
8V6 UNDER VOLTAGE PROTECTION
VSAGO VCEGO PFCGO VRS VRA
TO P 2 FILTER_STBY
TO P 7 AUX_SUPPLY
TO P 6 LLC_SUPPLY
VSA_CONTROL IAKS VRA VRS
A B C D E F G H
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
3122 123 6015.3
CL 36532051_007.eps 070703

Power Supply Panel (FM33 AA): Fan Control


1
2
3
4
5
6
7
8
9
A
B
C
P 4
FANCONTROL
FROM
P 7
AUX_SUPPLY
+10V
2700
10u 16V
6700
BZX384-C18
3700
330R
I701
S
D
7700
SI9433DY
G
FAN_SUPPLY_1
I700
5703
1m0
I710
5704
0390
1
2
3
M
FAN
OPTIONAL
F701
EH-B
3703
1K0
I711
6703
PRLL5819
2703
10u 16V
FROM
P 3
PROTECTION
FAN_SP1
I703
3701
2K2
I704
7701
BC847BW
3702
2K2
3122 123 6015.3
CL 36532051_008.eps
190603

0390	B9
2700	B5
2703	C7
3700	B5
3701	C5
3702	C5
3703	B6
5703	A7
5704	A8
6700	B5
6703	C7
7700	B6
7701	C6
F701	B8
I700	A6
I701	B6
I703	C5
I704	C6
I710	A7
I711	B6

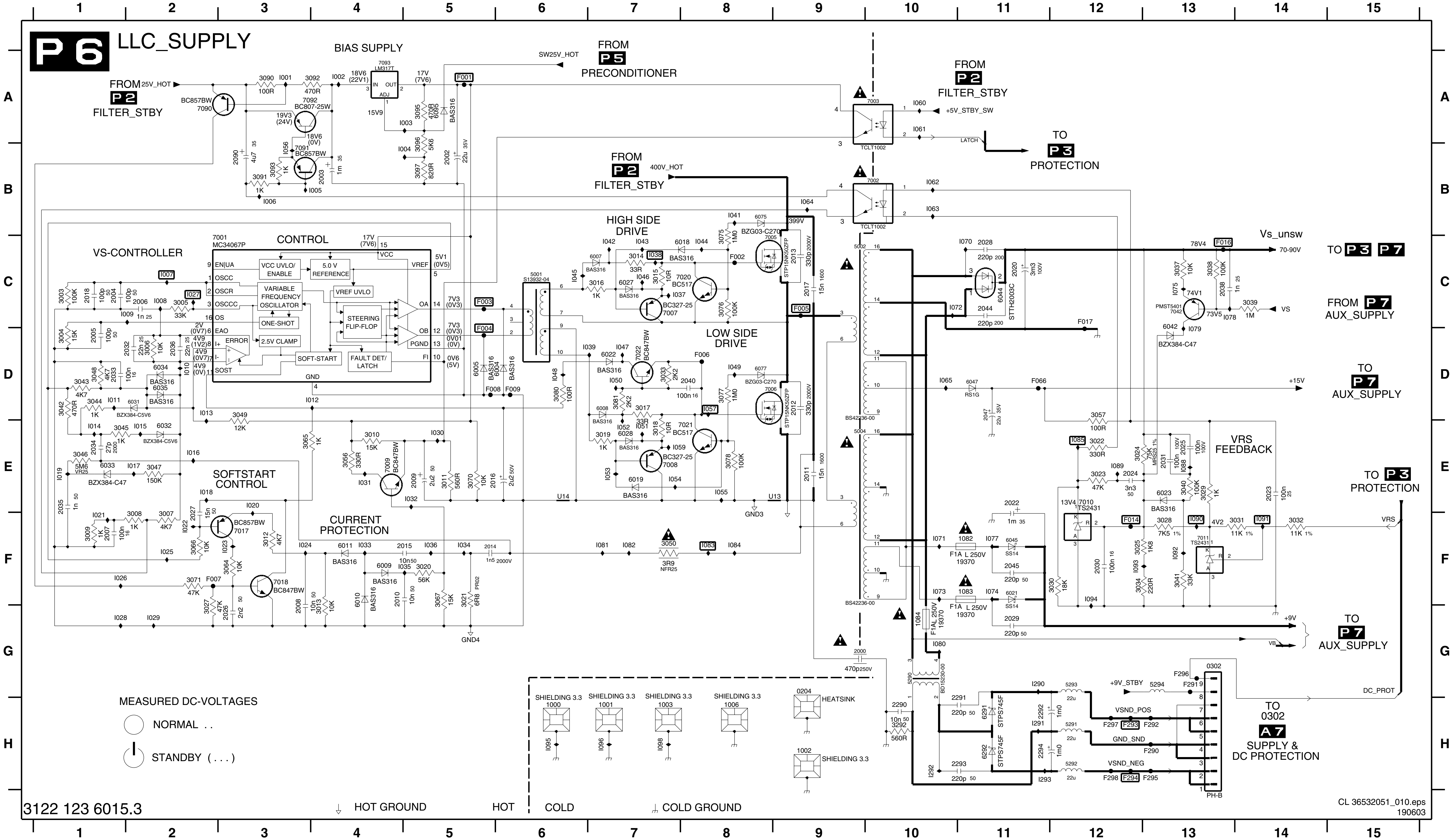
Power Supply Panel (FM33 AA): Pre-Conditioner


P5 PRECONDITIONER
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
PRECONDITIONER
FROM P2 FILTER_STBY
100-230VAC2
100-230VAC1
6600 GBU8J
2600 1n0 1000V
2601 1n0 1000V
6606 S3J
6605 S3J
2605 1u 400
F601
I603
5600 BS42228-02
I604
2611 220p 2000
6611 BYV29X-500
F600
400V
400V_HOT
TO P2 FILTER_STBY AND P6 LLC_SUPPLY
I605 6608 BAS316 I634
2612 1n 50
1V5 (0V) I606
3610 3R3
I607
1V4 (0V)
BC369 7608
2613 1n 50
1V5 (0V)
I635
6609 BZG03-C18
7610 STY34NB50
5612
I608
2610 1n8 2000
I630
I609
0V01 (0V)
3614 0R1 2W
3615 0R1 2W
3608 12R
0V (0V)
3611 1K FLM 1/6W
2616 220u 400V
2617 220u 400V
F604 F605
F608
SW25V_HOT
TO P6 LLC_SUPPLY
F996 F997 3999 1K F998 F999
3602 RES
I602
3601 RES
F602
GROUND
COLD GROUND
7661 MC34063AD
DCOL SWC IS SWE TIMC VCC CIN_NEG GND
S Q R
IPK OSC
REFERENCE REGULATOR
I639
3675 1R0
I638 5660 220u I640
I642
6663 SL04
6665 SL04
2660 470p
BIAS
2662 1m 25
3662 RES NFR25
3663 1R NFR25
I610 I631 I632 I611
2663 100u 50V
I612 6661 RS1G
I613
31V (5V7)
6660 RS1G
2664 100u 50V
I641
2661 1n0
3676 47K
3677 47K
3678 47K
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
3603 470K
3604 470K
3605 470K
3660 390R
3661 390R
PRECONDITIONER CONTROL
3668 1K NFR25H
F609
3673 1K NFR25H
I627
7650 MC33368
VREF RD VFB COMP MULT CS ZC AGND
LINE NC1 NC2 FC VCC GATE PGND LEB
CONTROL
I622
I621
I618
I619
I620
3665 10K
F610
3642 100R
6640 SL04
I625
14V7 (4V8)
7641 BC817
1V2 (0V)
3641 470R
2642 1n 25
I626
6641 BAS316
6642 SL04
I629
2675 10n 500V
2674 10n 500V
I628
3683 330K
3684 330K
3685 330K
2673 4n7 500V
3680 270K
3681 270K
3682 270K
6654 BAS316
3654 10K
I617
2V3 (0V)
BC857BW 7654
I615
3655 1K
I633
2654 47u 16V
2656 100n 25
3652 1M
I616
2655 1u 10
3651 10K
2651 10n 50
3666 100R
2666 4n7 50
6652 SL04
2653 330p 50
6653 BZX384-C8V2
3667 10K
I623
2672 100n 25
2608 1n 25
2665 470p 50
3639 1K
2640 470p 50
3640 330R
I624
6643 BZX384-C18
0V2 (0V)
7640 BSN20
1V5 (0V)
G D S
F606
2671 100n 16
I636
2670 100n 16
3664 240K 1%
3671 11K 1%
HOT GROUND
HOT BORDER
3122 123 6015.3
CL 36532051_009.eps
190603

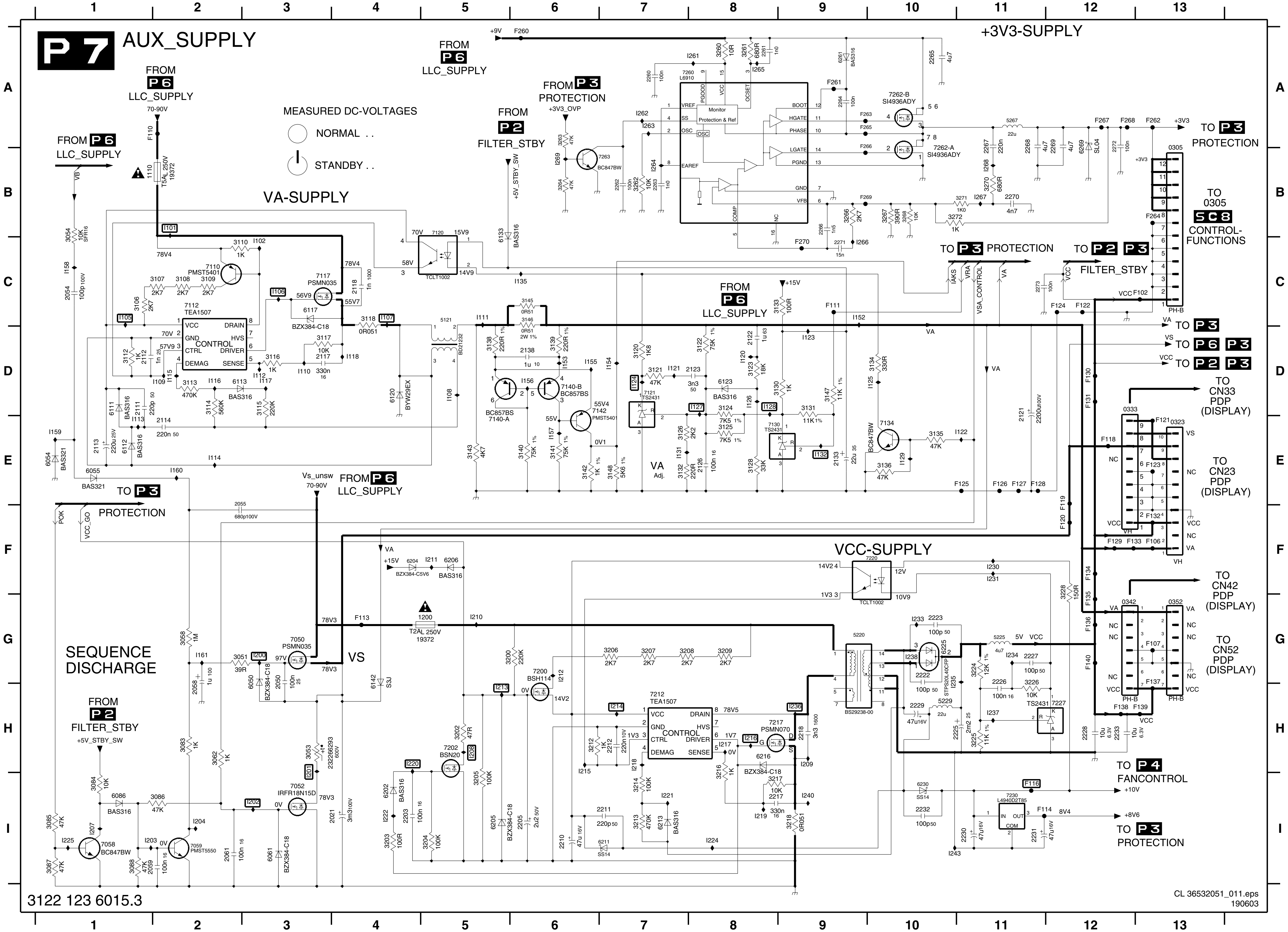
2600	B3
2601	B2
2605	C3
2608	H8
2610	C7
2611	B8
2612	C6
2613	C6
2616	C9
2617	C9
2640	H9
2642	G11
2651	H4
2653	H5
2654	H1
2655	H3
2656	H2
2660	E10
2661	F8
2662	F11
2663	E7
2664	F7
2665	H8
2666	H4
2670	I12
2671	H12
2672	H7
2673	G12
2674	G12
2675	G12
3601	D2
3602	D2
3603	F3
3604	F3
3605	G3
3608	C5
3610	C6
3611	C7
3614	C8
3615	C8
3639	H8
3640	H9
3641	G9
3642	G9
3651	H3
3652	H3
3654	H1
3655	H1
3660	F5
3661	G5
3662	E6
3663	E6
3664	H12
3665	G8
3666	H4
3667	H6
3668	F7
3671	H12
3673	F12
3675	E8
3676	F8
3677	F8
3678	F8
3680	G12
3681	G12
3682	H12
3683	G12
3684	G12
3685	H12
3999	A11
5600	A5
5612	B7
5660	E11
6600	B2
6605	A3
6606	A2
6608	B6
6609	C7
6611	B8
6640	G9
6641	H10
6642	H11
6643	H9
6652	H5
6653	H5
6654	H1
6660	F7
6661	E7
6663	E10
6665	E11
7608	C6
7610	C7
7640	H10
7641	G10
7650	G6
7654	H2
7661	D8
F600	B10
F601	B3
F602	E2
F604	D10
F605	D10
F606	I10
F608	D11
F609	F9
F610	G9
F996	A10
F997	A10
F998	A11
F999	A11
I602	D2
I603	B4
I604	B7
I605	B5
I606	C6
I607	C7
I608	B7
I609	C8
I610	E5
I611	E6
I612	E7
I613	E7
I615	H1
I616	H3
I617	G2
I618	H4
I619	H4
I620	H5
I621	G4
I622	G7
I623	G8
I624	H9
I625	G10
I626	H10
I627	F12
I628	G11
I629	H11
I630	C8
I631	E5
I632	E6
I633	H2
I634	B6
I635	C6
I636	H12
I638	E10
I639	E8
I640	E11
I641	E8
I642	E10

Power Supply Panel (FM33 AA): LLC Supply

U13 E9
U14 E6
0204 G9
0302 G13
1000 H6
1001 H7
1002 H9
1003 H7
1006 H8
1082 F11
1083 F11
1084 G10
2000 G9
2002 B5
2003 B4
2004 C1
2005 D1
2006 C2
2007 F1
2008 G3
2009 E5
2010 F4
2011 E9
2012 D9
2013 C9
2014 F5
2015 F5
2016 E5
2017 C9
2018 C1
2020 C11
2022 E11
2023 E14
2024 E12
2025 E13
2026 G3
2027 F2
2028 C11
2029 G11
2030 F12
2031 E13
2032 D2
2033 D1
2034 E1
2035 E1
2036 D2
2038 C13
2040 D8
2044 C11
2045 F11
2047 D11
2090 B3
2290 H10
2291 H11
2292 H11
2293 H11
2294 H11
3003 C1
3004 D1
3005 C2
3006 D2
3007 F2
3008 F2
3009 F1
3010 E4
3011 E5
3012 F3
3013 G4
3014 C7
3015 C7
3016 C7
3017 D7
3018 E7
3019 E7
3020 F5
3021 F5
3022 E12
3023 E12
3024 E12
3025 F12
3027 G2
3028 F13
3029 E13
3030 F12
3031 F14
3032 F14
3033 D7
3034 F12
3037 C13
3038 C13
3039 C14
3040 E13
3041 F13
3042 D1
3043 D1
3044 D1
3045 E1
3046 E1
3047 E2
3048 D1
3049 D3
3050 F7
3056 E4
3057 D12
3064 F3
3065 E3
3066 F2
3067 F5
3070 E5
3071 F2
3075 C8
3076 C8
3077 D8
3078 E8
3080 D6
3081 D7
3090 A3
3091 B3
3092 A4
3093 B3
3095 A5
3096 B5
3097 B5
3292 H10
5001 C6
5002 C9
5004 E9
5290 G10
5291 H12
5292 H12
5293 G12
5294 G13
6004 D6
6005 D5
6007 C7
6008 D7
6009 F4
6010 F4
6011 F4
6018 C8
6019 E7
6021 F11
6022 D7
6023 E13
6027 C7
6028 E7
6031 D2
6032 E2
6033 E1
6034 D2
6035 D2
6042 D13
6044 C11
6045 F11
6047 D11
6075 B8
6077 D8
6095 A5
6291 H11
6292 H11
7001 C2
7002 B10
7003 A10
7005 C8
7006 D8
7007 C7
7008 E7
7009 E4
7010 E12
7011 F13
7017 F3
7018 F3
7020 C8
7021 E8
7022 D7
7042 C13
7090 A2
7091 B3
7092 A4
7093 A4
F001 A5
F002 C8
F003 C5
F004 D5
F005 C9
F006 D8
F007 F2
F008 D5
F009 D6
F014 F12
F016 C13
F017 C12
F066 D11
F290 H13
F291 G13
F292 H13
F293 H12
F294 H12
F295 H13
F296 G13
F297 H12
F298 H12
I001 A3
I002 A4
I003 A5
I004 B5
I005 B4
I006 B3
I007 C2
I008 C2
I009 C2
I010 D2
I011 D1
I012 D4
I013 D2
I014 E1
I015 E2
I016 E2
I017 E2
I018 E2
I019 E1
I020 E3
I021 F1
I022 F2
I023 F3
I024 F3
I025 F2
I026 F1
I027 C2
I028 G1
I029 G2
I030 E5
I031 E4
I032 E5
I033 F4
I034 F5
I035 F5
I036 F5
I037 C7
I038 C7
I039 D7
I041 B8
I042 C7
I043 C7
I044 C8
I045 C6
I046 C7
I047 D7
I048 D6
I049 D8
I050 D7
I051 E7
I052 E7
I053 E7
I054 E7
I055 E8
I056 B3
I057 D8
I059 E7
I060 A10
I061 A10
I062 B10
I063 B10
I064 B9
I065 D10
I070 C11
I071 F10
I072 C10
I073 F10
I074 F11
I075 C13
I077 F11
I078 C13
I079 D13
I080 G10
I081 F7
I082 F7
I083 F8
I084 F8
I085 E12
I088 E13
I089 E12
I090 F13
I091 F14
I092 F13
I093 F12
I094 F12
I095 H6
I096 H7
I098 H7
I290 G11
I291 H11
I292 H10
I293 H11


P 6
LLC_SUPPLY
BIAS SUPPLY
FROM P 2 FILTER_STBY
25V_HOT
SW25V_HOT
FROM P 5 PRECONDITIONER
FROM P 2 FILTER_STBY
TO P 3 PROTECTION
LATCH
+5V_STBY_SW
FROM P 2 FILTER_STBY
400V_HOT
VS-CONTROLLER
CONTROL
7001 MC34067P
VCC UVLO/ ENABLE
5.0 V REFERENCE
VARIABLE FREQUENCY OSCILLATOR
VREF UVLO
ONE-SHOT
STEERING FLIP-FLOP
ERROR
2.5V CLAMP
SOFT-START
FAULT DET/ LATCH
HIGH SIDE DRIVE
LOW SIDE DRIVE
SOFTSTART CONTROL
CURRENT PROTECTION
Vs_unsw
TO P 3 P 7
FROM P 7 AUX_SUPPLY
TO P 7 AUX_SUPPLY
+15V
VRS FEEDBACK
TO P 3 PROTECTION
VRS
+9V
TO P 7 AUX_SUPPLY
DC_PROT
TO 0302 A 7 SUPPLY & DC PROTECTION
VSND_POS
GND_SND
VSND_NEG
+9V_STBY
MEASURED DC-VOLTAGES
NORMAL . .
STANDBY (. . .)
SHIELDING 3.3
HEATSINK
3122 123 6015.3
HOT GROUND
HOT
COLD
COLD GROUND
CL 36532051_010.eps
190603

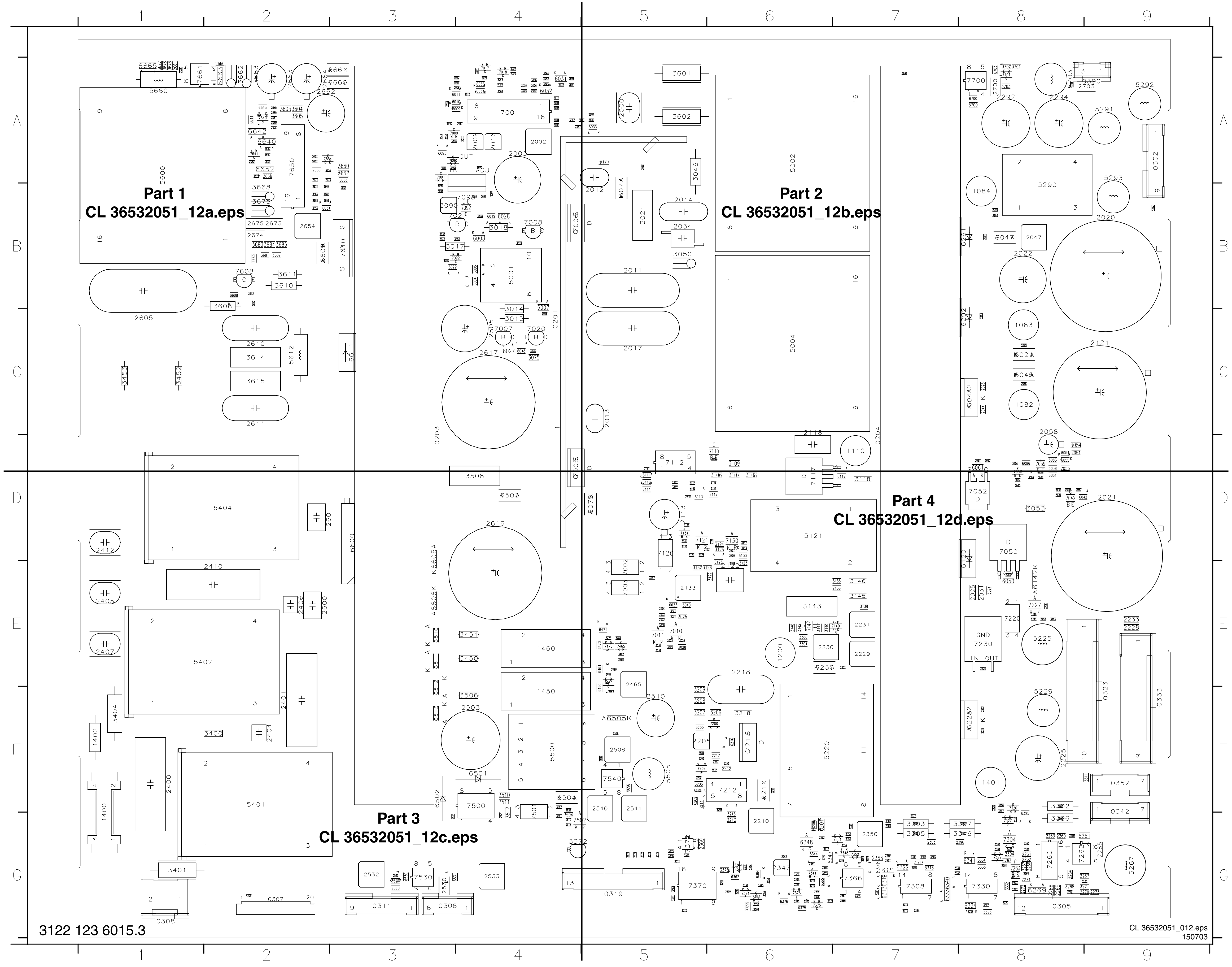
Power Supply Panel (FM33 AA): Aux Supply


P7 AUX_SUPPLY
FROM P6 LLC_SUPPLY
FROM P2 FILTER_STBY
FROM P3 PROTECTION
MEASURED DC-VOLTAGES
NORMAL ..
STANDBY ..
VA-SUPPLY
+3V3-SUPPLY
VCC-SUPPLY
SEQUENCE DISCHARGE
TO P3 PROTECTION
TO 0305 SC8 CONTROL-FUNCTIONS
TO P2 P3 FILTER_STBY
TO P3
TO P6 P3
TO P2 P3
TO CN33 PDP (DISPLAY)
TO CN23 PDP (DISPLAY)
TO CN42 PDP (DISPLAY)
TO CN52 PDP (DISPLAY)
TO P4 FANCONTROL
VS
VA
3122 123 6015.3
CL 36532051_011.eps
190603

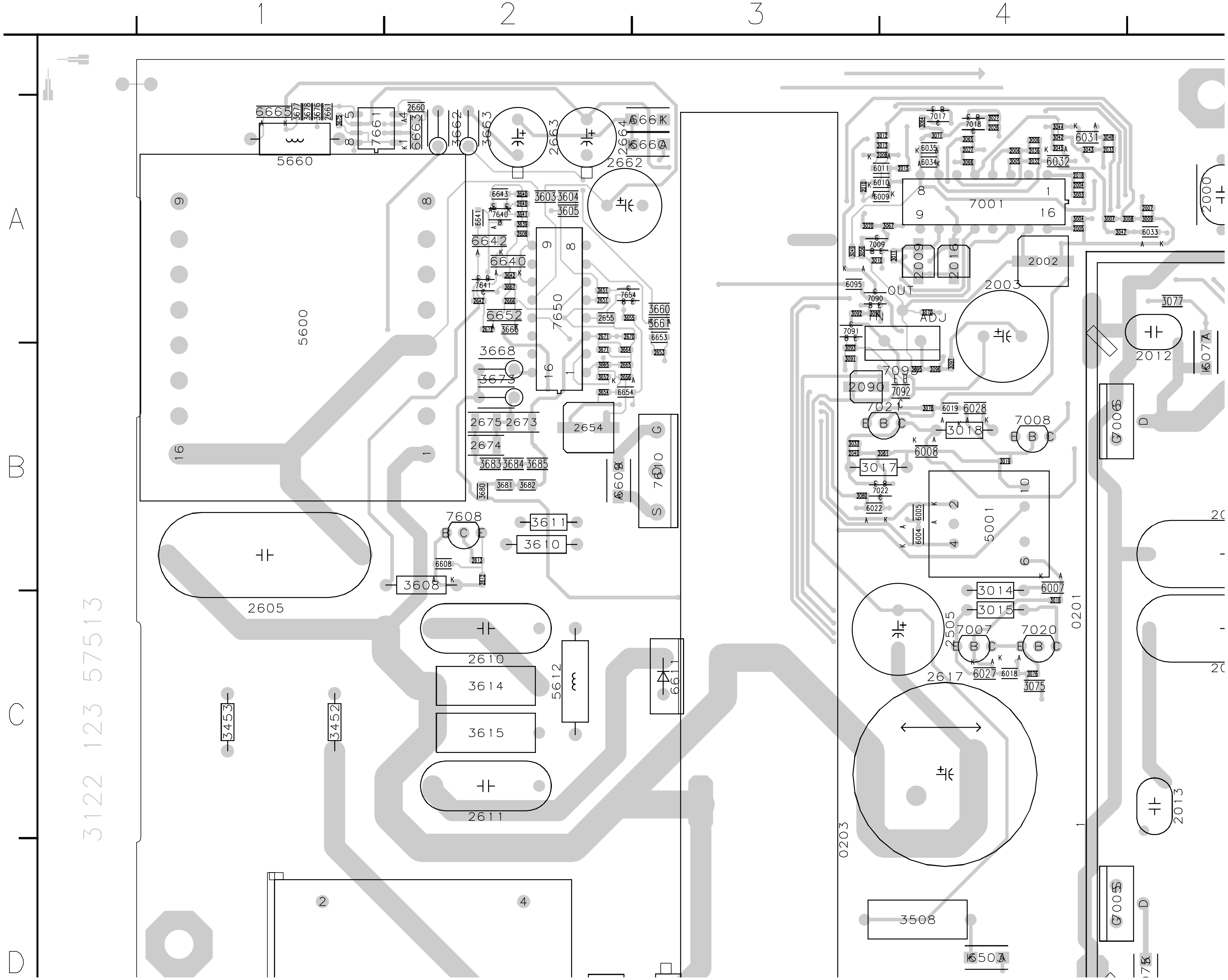
0305	A13
0323	E13
0333	D13
0342	G13
0352	G13
1110	B1
1200	G5
2021	I4
2050	G3
2054	C1
2055	F2
2058	H2
2059	I1
2061	I2
2111	D1
2112	D1
2113	E1
2114	E2
2117	D3
2118	C4
2121	D11
2122	D8
2123	D8
2126	E8
2133	E9
2138	D6
2203	I4
2205	I6
2210	I6
2211	I7
2212	H7
2217	I8
2218	H9
2222	G10
2223	G10
2225	H11
2226	H11
2227	G11
2228	H12
2229	H10
2230	I11
2231	I11
2232	I10
2233	H12
2260	A7
2261	A8
2262	B7
2263	B7
2264	A9
2265	A10
2266	B9
2267	A11
2268	A11
2269	A12
2270	B11
2271	C9
2272	A12
2273	C11
3051	G2
3053	H3
3054	B1
3058	G2
3062	H2
3083	H2
3084	I1
3085	I1
3086	I2
3087	I1
3088	I1
3106	C1
3107	C2
3108	C2
3109	C2
3110	C2
3112	D1
3113	D2
3114	D2
3115	D3
3116	D3
3117	D3
3118	C4
3120	D7
3121	D7
3122	D8
3123	D8
3124	D8
3125	E8
3126	E7
3128	E8
3130	D9
3131	D9
3132	E7
3133	C9
3134	D10
3135	E10
3136	E10
3138	D5
3139	D6
3140	E6
3141	E6
3142	E6
3143	E5
3145	C6
3146	C6
3147	D9
3148	E7
3200	G6
3202	H5
3203	I4
3204	I5
3205	I5
3206	G7
3207	G7
3208	G7
3209	G8
3212	H6
3213	I7
3214	I7
3216	H8
3217	I8
3218	I9
3224	G11
3225	H11
3226	H11
3228	F12
3260	A8
3261	A8
3262	B7
3263	A6
3264	B6
3266	B9
3267	B10
3268	B10
3270	B11
3271	B11
3272	B10
5121	C5
5220	G9
5225	G11
5229	H10
5267	A11
6050	G3
6054	E1
6055	E1
6061	I3
6086	I1
6111	D1
6112	E1
6113	D2
6117	C3
6120	D4
6123	D8
6133	B5
6142	G4
6202	I4
6204	F4
6205	I5
6206	F5
6211	I7
6213	I7
6216	H8
6225	G10
6230	I10
6261	A9
6269	A12
7050	G3
7052	I3
7058	I1
7059	I2
7110	C2
7112	C2
7117	C3
7120	B5
7121	D7
7130	E8
7134	E10
7140-A	E5
7140-B	D6
7142	D6
7200	G6
7202	H5
7212	H7
7217	H8
7220	F10
7227	H12
7230	I11
7260	A8
7262-A	B10
7262-B	A10
7263	B6
F102	C13
F106	F13
F107	G13
F110	A1
F111	C9
F113	G4
F114	I11
F116	I11
F118	E12
F119	E12
F120	F12
F121	E13
F122	C12
F123	E13
F124	C12
F125	E11
F126	E11
F127	E11
F128	E11
F129	F12
F130	D12
F131	D12
F132	F13
F133	F12
F134	F12
F135	G12
F136	G12
F137	H13
F138	H12
F139	H13
F140	G12
F260	A6
F261	A9
F262	A13
F263	A9
F264	B13
F265	A9
F266	B9
F267	A12
F268	A12
F269	B9
F270	C9
I101	B2
I102	C3
I105	C1
I106	C3
I107	C4
I108	D5
I109	D2
I110	D3
I111	C5
I112	D3
I113	E1
I114	E2
I115	D2
I116	D2
I117	D3
I118	D4
I120	D8
I121	D7
I122	E11
I123	D9
I124	D7
I125	D10
I126	D8
I127	D8
I128	D8
I129	E10
I131	E7
I132	E9
I135	C6
I152	C9
I153	D6
I154	D7
I155	D6
I156	D6
I157	E6
I158	C1
I159	E1
I160	E2
I161	G2
I200	G3
I201	H3
I202	I3
I203	I1
I204	I2
I207	I1
I208	H5
I209	H9
I210	G5
I211	F5
I212	G6
I213	H5
I214	H7
I215	H6
I216	H8
I217	H8
I218	H7
I219	I8
I220	H4
I221	I7
I222	I4
I224	I8
I225	I1
I230	F11
I231	F11
I233	G10
I234	G11
I235	G10
I236	H9
I237	H11
I238	G10
I240	I9
I243	I10
I261	A8
I262	A7
I263	A7
I264	B7
I265	A8
I266	C9
I267	B11
I268	B11
I269	B6

Layout Power Supply Panel (FM33 AA) (Overview Top Side only (no components on bottom side))

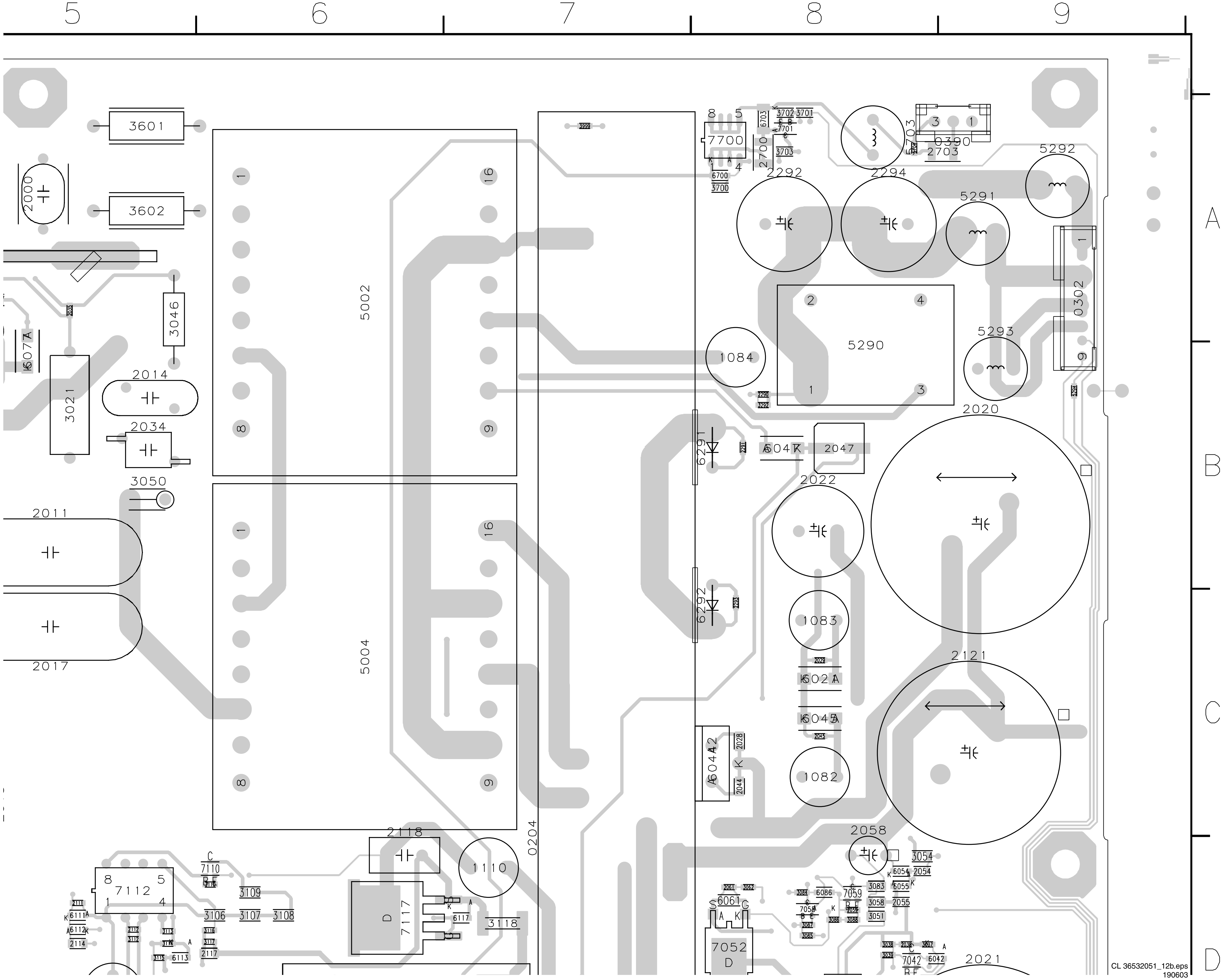
0201	C4
0203	D3
0204	D7
0302	A9
0305	G8
0306	G3
0307	G2
0308	G1
0311	G3
0319	G5
0323	F9
0333	F9
0342	F9
0352	F9
0390	A9
1082	C8
1083	C8
1084	B8
1110	D7
1200	E6
1400	G1
1401	F8
1402	F1
1450	F4
1460	E4
2000	A5
2002	A4
2003	A4
2004	A4
2005	A4
2006	A4
2007	A5
2008	A4
2009	A4
2010	A3
2011	B5
2012	B5
2013	C5
2014	B5
2015	A4
2016	A4
2017	C5
2018	A4
2020	B9
2021	D9
2022	B8
2023	E5
2024	E5
2025	E8
2026	A4
2027	A4
2028	C8
2029	C8
2030	E5
2031	E8
2032	A4
2033	A4
2034	B5
2035	A5
2036	A4
2038	D8
2040	B3
2044	C8
2045	C8
2047	B8
2050	E8
2054	D8
2055	D8
2058	C8
2059	D8
2061	D8
2090	B3
2111	D5
2112	D5
2113	D5
2114	D5
2117	D6
2118	C6
2121	C9
2122	E6
2123	D5
2126	D6
2133	E5
2138	E7
2203	F5
2205	F5
2210	G6
2211	F6
2212	F6
2217	F6
2218	E6
2222	F8
2223	F8
2225	F8
2226	E8
2227	E8
2228	E9
2229	E7
2230	E6
2231	E7
2232	E7
2233	E9
2260	G8
2261	G8
2262	G8
2263	G8
2264	G8
2265	G9
2266	G8
2267	G9
2268	G8
2269	G8
2270	G9
2271	G8
2272	G8
2273	G9
2290	B8
2291	B8
2292	A8
2293	C8
2294	A8
2303	G7
2304	G8
2305	G7
2306	G7
2316	G7
2322	G8
2324	G8
2343	G6
2350	G7
2352	G7
2364	G6
2366	G7
2369	G5
2370	G5
2371	G5
2372	G5
2373	G5
2374	G5
2375	G5
2376	G6
2380	G7
2381	G6
2385	G7
2393	G6
2396	G8
2400	F1
2401	F2
2404	F2
2405	E1
2406	E2
2407	E1
2410	E2
2412	D1
2465	E5
2503	F4
2504	G4
2505	C4
2507	F5
2508	F5
2509	F5
2510	F5
2511	G4
2512	G4
2513	G3
2530	G3
2532	G3
2533	G4
2540	F5
2541	F5
2600	E2
2601	D2
2605	C1
2608	A2
2610	C2
2611	C2
2612	B2
2613	B2
2616	D4
2617	C4
2640	A2
2642	A2
2651	A2
2653	B3
2654	B2
2655	A2
2656	B2
2660	A2
2661	A1
2662	A2
2663	A2
2664	A2
2665	B2
2666	A2
2670	A2
2671	A2
2672	A2
2673	B2
2674	B2
2675	B2
2700	A8
2703	A9
3003	A4
3004	A4
3005	A4
3006	A4
3007	A4
3008	A5
3009	A5
3010	A3
3011	A4
3012	A4
3013	A4
3014	B4
3015	C4
3016	C4
3017	B3
3018	B4
3019	B4
3020	A3
3021	B5
3022	E5
3023	E5
3024	E8
3025	E5
3027	A4
3028	E5
3029	E5
3030	E5
3031	E5
3032	E5
3033	B3
3034	E5
3037	D8
3038	D8
3039	D8
3040	E5
3041	E5
3042	A4
3043	A4
3044	A4
3045	A4
3046	A5
3047	A4
3048	A4
3049	A3
3050	B5
3051	D8
3053	D8
3054	D8
3056	A3
3057	E5
3058	D8
3062	D8
3064	A4
3065	A4
3066	A4
3067	A4
3070	A4
3071	A4
3075	C4
3076	C4
3077	A5
3078	B4
3080	B3
3081	B4
3083	D8
3084	D8
3085	D8
3086	D8
3087	D8
3088	D8
3090	A3
3091	B3
3092	A3
3093	B3
3095	B4
3096	B4
3097	B4
3106	D6
3107	D6
3108	D6
3109	D6
3110	D6
3112	D5
3113	D5
3114	D5
3115	D5
3116	D6
3117	D6
3118	D7
3120	D5
3121	D5
3122	E6
3123	E6
3124	D6
3125	D6
3126	E6
3128	E6
3130	D6
3131	D6
3132	E5
3133	D6
3134	D5
3135	D5
3136	D5
3138	E7
3139	E7
3140	E6
3141	E6
3142	E6
3143	E6
3145	E7
3146	E7
3147	D6
3148	E6
3200	F5
3202	F5
3203	F6
3204	F5
3205	F5
3206	F6
3207	F5
3208	F5
3209	F5
3212	F6
3213	G6
3214	F5
3216	F6
3217	F6
3218	F6
3224	E8
3225	E8
3226	E8
3228	E8
3260	G8
3261	G8
3262	G8
3263	G8
3264	G8
3266	G8
3267	G8
3268	G8
3270	G9
3271	G9
3272	G8
3292	B8
3300	E6
3301	E6
3302	F8
3303	G7
3304	G8
3305	G7
3306	G7
3307	G7
3308	G7
3310	G7
3311	F9
3312	G7
3313	G7
3316	G8
3317	G7
3319	G7
3320	G8
3321	G7
3322	G8
3323	G8
3324	G8
3325	F8
3326	F8
3327	F8
3328	G8
3331	G7
3332	G8
3333	G8
3334	G8
3335	G8
3339	G7
3340	G7
3341	G6
3342	G6
3343	G6
3344	G6
3345	G6
3347	G6
3348	G7
3349	G7
3350	G7
3351	G7
3352	G7
3353	G6
3354	G7
3358	G6
3359	G6
3360	G5
3361	G6
3363	G5
3364	G6
3368	G5
3369	G5
3370	G5
3371	G5
3372	G4
3373	G6
3374	G6
3376	G6
3377	G6
3378	G6
3380	G6
3381	G6
3382	G7
3385	G6
3386	G7
3387	G7
3388	G8
3389	G8
3390	G6
3391	G6
3392	G6
3393	G6
3394	G6
3395	G6
3396	G8
3397	G8
3400	F2
3401	G1
3404	F1
3450	E4
3451	E4
3452	C1
3453	C1
3460	E5
3461	E5
3463	F5
3465	E5
3467	E5
3469	E5
3470	E5
3501	G4
3502	F4
3503	F4
3504	G4
3505	F5
3506	F4
3508	D4
3510	F4
3511	F4
3512	G4
3520	G3
3530	G3
3601	A5
3602	A5
3603	A2
3604	A2
3605	A2
3608	B2
3610	B2
3611	B2
3614	C2
3615	C2
3639	A2
3640	A2
3641	A2
3642	A2
3651	A2
3652	B2
3654	B2
3655	A2
3660	A3
3661	A3
3662	A2
3663	A2
3664	B2
3665	B2
3666	A2
3667	A2
3668	B2
3671	B2
3673	B2
3675	A1
3676	A1
3677	A1
3678	A1
3680	B2
3681	B2
3682	B2
3683	B2
3684	B2
3685	B2
3700	A8
3701	A8
3702	A8
3703	A8
3800	G8
3801	G8
3802	G8
3803	F8
3804	G7
3805	G7
3999	A7
4300	G2
5001	B4
5002	A6
5004	C6
5121	D6
5220	F6
5225	E8
5229	F8
5267	G9
5290	B8
5291	A9
5292	A9
5293	A9
5294	B9
5401	F2
5402	E1
5404	D2
5500	F4
5505	F5
5600	A1
5612	C2
5660	A1
5703	A8
5704	A8
6004	B4
6005	B4
6007	B4
6008	B4
6009	A4
6010	A4
6011	A4
6018	C4
6019	B4
6021	C8
6022	B3
6023	E5
6027	C4
6028	B4
6031	A4
6032	A4
6033	A5
6034	A4
6035	A4
6042	D8
6044	C8
6045	C8
6047	B8
6050	E8
6054	D8
6055	D8
6061	D8
6075	D5
6077	B5
6086	D8
6095	A3
6111	D5
6112	D5
6113	D5
6117	D7
6120	D8
6123	E6
6133	D6
6142	E8
6202	F5
6204	G6
6205	F5
6206	G6
6211	F6
6213	G6
6216	F6
6225	F8
6230	E6
6261	G9
6269	G8
6291	B8
6292	C8
6312	G7
6313	G7
6321	G7
6322	G7
6325	G8
6333	G7
6334	G8
6340	G7
6341	G8
6344	G6
6347	G6
6348	G6
6362	G6
6364	G6
6365	G6
6375	G6
6376	G6
6378	G7
6390	G6
6460	F5
6461	E5
6470	E5
6471	E5
6501	F4
6502	F3
6503	D4
6504	F4
6505	F5
6510	E3
6511	E3
6512	F3
6513	F3
6520	G3
6530	G3
6531	G3
6600	D3
6605	D3
6606	E3
6608	B2
6609	B2
6611	C3
6640	A2
6641	A2
6642	A2
6643	A2
6652	A2
6653	A3
6654	B2
6660	A3
6661	A3
6663	A2
6665	A1
6700	A8
6703	A8
7001	A4
7002	E5
7003	E5
7005	D4
7006	B4
7007	C4
7008	B4
7009	A3
7010	E5
7011	E5
7017	A4
7018	A4
7020	C4
7021	B4
7022	B4
7042	D8
7050	D8
7052	D8
7058	D8
7059	D8
7090	A3
7091	A3
7092	B4
7093	B4
7110	D6
7112	D5
7117	D6
7120	D5
7121	D5
7130	D6
7134	D5
7140	E7
7142	E6
7200	F6
7202	F5
7212	F6
7217	F6
7220	E8
7227	E8
7230	E8
7260	G8
7262	G8
7263	G8
7304	G8
7308	G7
7326	F8
7327	G8
7330	G8
7341	G6
7348	G7
7351	G7
7352	G7
7362	G6
7366	G7
7370	G5
7372	G5
7375	G6
7376	G6
7389	G8
7391	G6
7393	G6
7460	E5
7465	E5
7470	E5
7500	F4
7501	F4
7502	G4
7530	G3
7540	F5
7608	B2
7610	B3
7640	A2
7641	A2
7650	A2
7654	A2
7661	A1
7700	A8
7701	A8



Layout Power Supply Panel (FM33 AA) (Part 1 Top Side)

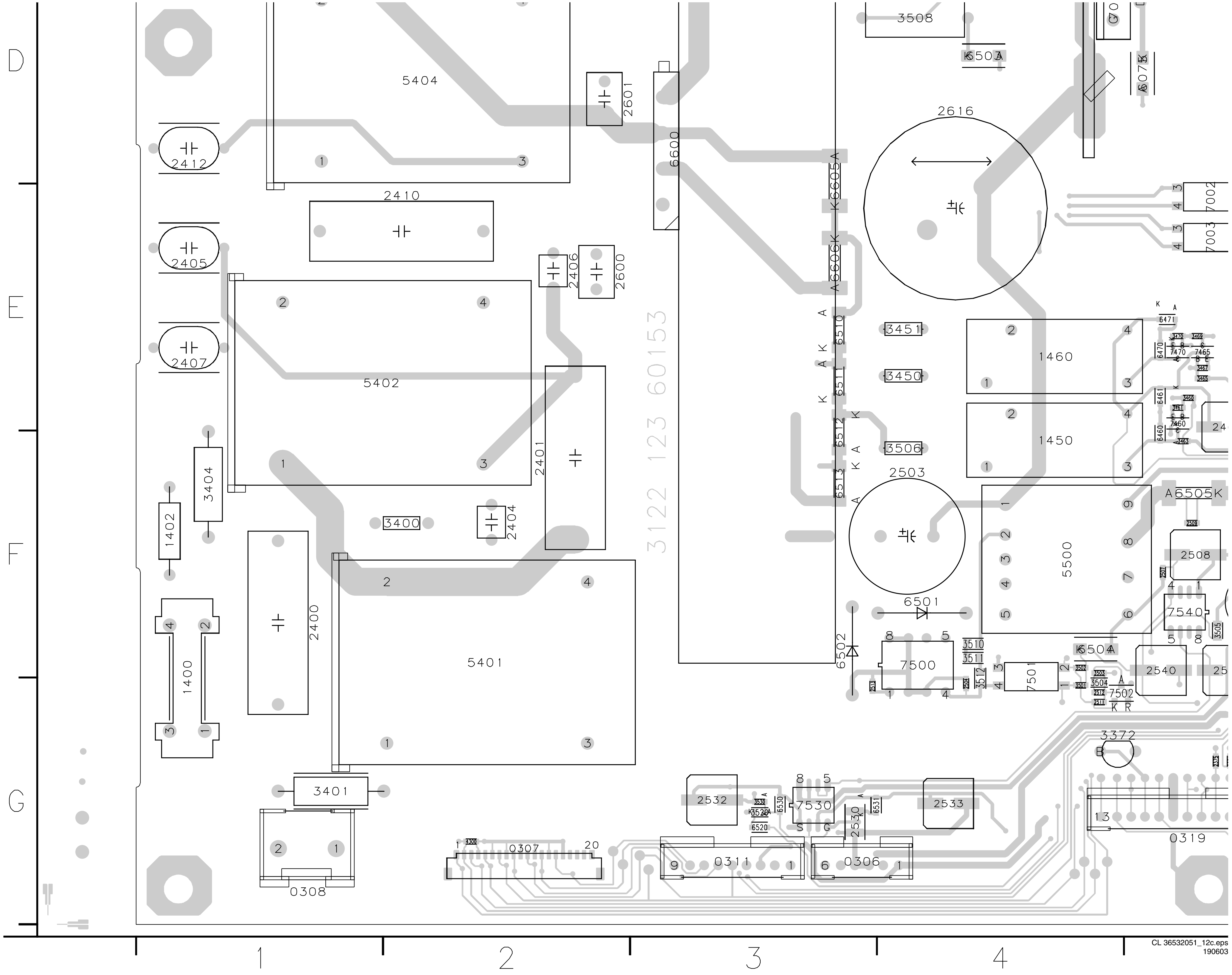

1
2
3
4
A
B
C
D
3122 123 57513
5660
6665
7661
2660
6663
3662
3663
2663
2664
6661
6660
2662
5600
6643
7640
6641
6642
6640
7641
6652
3666
3668
3673
7650
7654
3660
3661
6653
6654
3603
3604
3605
2675
2673
2674
3683
3684
3685
3680
3681
3682
2654
6609
7610
7608
3611
3610
6608
3608
2605
2610
3614
3615
5612
6611
2611
3453
3452
3508
6507
7017
7018
6031
6032
6035
6034
6011
6010
6009
7001
2000
7009
2009
2016
2002
2003
6095
7090
OUT
IN
ADJ
7091
709
7092
2090
7020
6019
6028
7008
3018
6008
3017
7022
6022
6005
6004
5001
3014
6007
3015
2505
7007
6027
6018
3075
2617
0201
0203
3077
6077
2012
6006
6033
2013
6005
CL 36532051_12a.eps
190603

Layout Power Supply Panel (FM33 AA) (Part 2 Top Side)


5
6
7
8
9
A
B
C
D
3601
3602
2000
3046
6071
3021
2014
2034
3050
2011
2017
5002
5004
1
16
8
9
0204
2118
1110
3118
7117
D
6117
7112
8
5
1
4
7110
C
B E
3109
3106
3107
3108
2111
6111
6112
2114
3112
3113
3114
3116
3117
2117
3115
6113
7700
8
5
4
6700
3700
2700
6703
3702
3701
7701
3703
5703
0390
3
1
2703
2292
2294
5292
5291
0302
5290
2
4
3
1084
5293
2020
6291
6047
2047
2022
6292
1083
2121
6021
6045
6044
2028
2044
1082
2058
3054
6054
2054
6055
3083
7059
3058
2055
3051
6061
S
G
A
K
7052
D
6086
7058
3038
7042
6042
2021

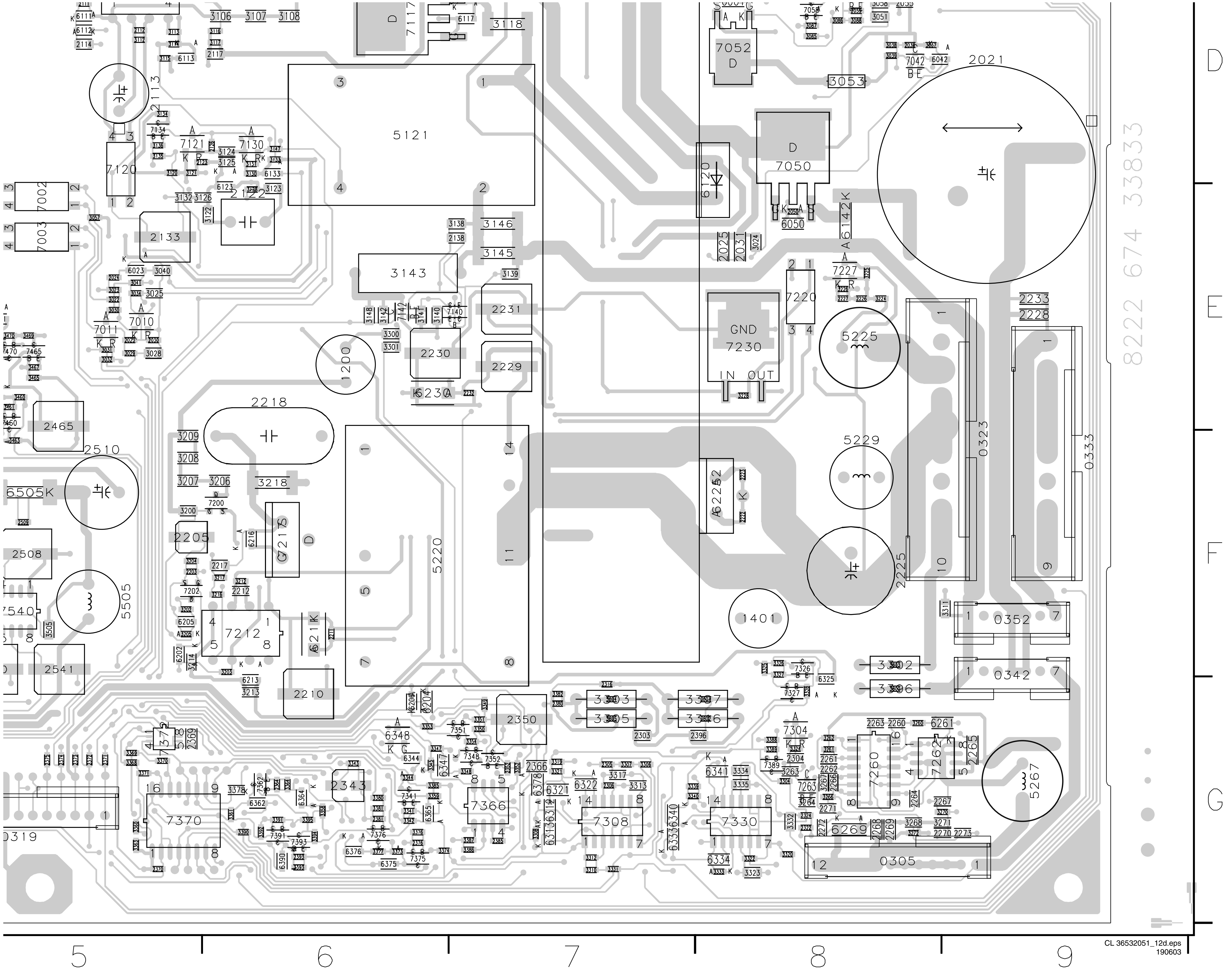
CL 36532051_12b.eps
190603

Layout Power Supply Panel (FM33 AA) (Part 3 Top Side)


D
E
F
G
1
2
3
4
5404
2601
6600
3508
6503
6075
2616
2412
2410
2405
2406
2600
2407
5402
3122 123 60153
6605
6606
6510
6511
6512
6513
3451
3450
3506
1460
1450
7002
7003
6471
7470
7465
6470
6461
7460
6460
3404
1402
2401
3400
2404
2503
A6505K
5500
2508
7540
6501
6502
7500
3510
3511
3512
7501
6504
3504
7502
2540
2400
1400
5401
3372
3401
2532
7530
6530
6520
6531
2530
2533
0319
0307
0311
0306
0308

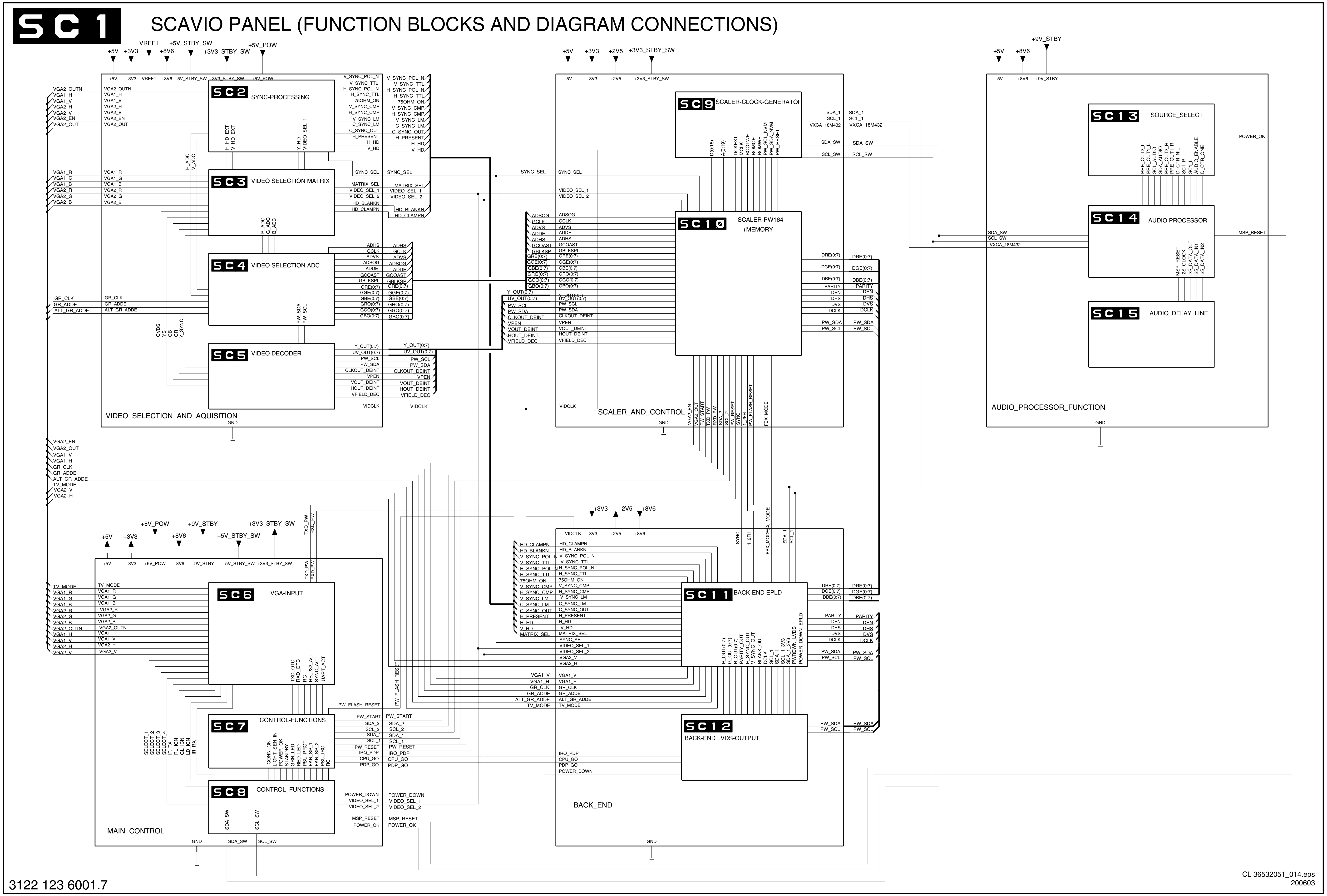
CL 36532051_12c.eps
190603

Layout Power Supply Panel (FM33 AA) (Part 4 Top Side)

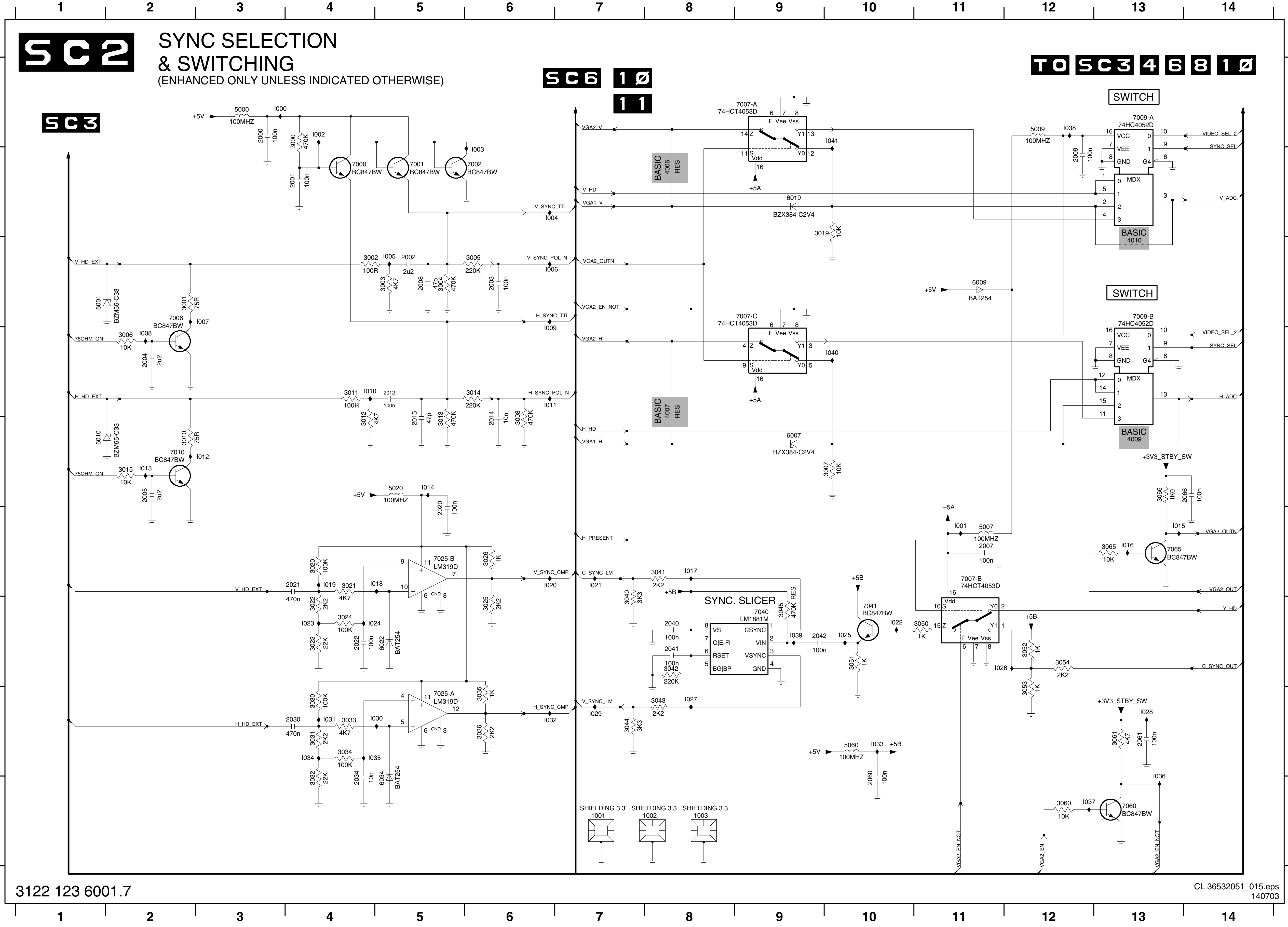

D
E
F
G
5
6
7
8
9
8222 674 33833
5121
5220
2021
7050
7052
7117
6120
3143
3118
3146
3145
2218
2231
2230
2229
6230
1200
1401
2133
2122
7120
7121
7130
7002
7003
7011
7010
2465
2510
6505
2508
5505
2541
2205
7217
7212
6211
2210
2350
2343
7370
0319
7366
7308
7330
6322
6321
3303
3305
3307
3306
3302
3306
0352
0342
0305
0323
0333
2225
5225
5229
7220
7227
6142
7230
GND
IN OUT
6050
3053
2025
2031
7260
7262
2265
6261
5267
6269
7304
7263
2233
2228
2303
2396
6341
6334
3323

CL 36532051_12d.eps
190603

SCAVIO Panel: Function Blocks and Diagram Connections

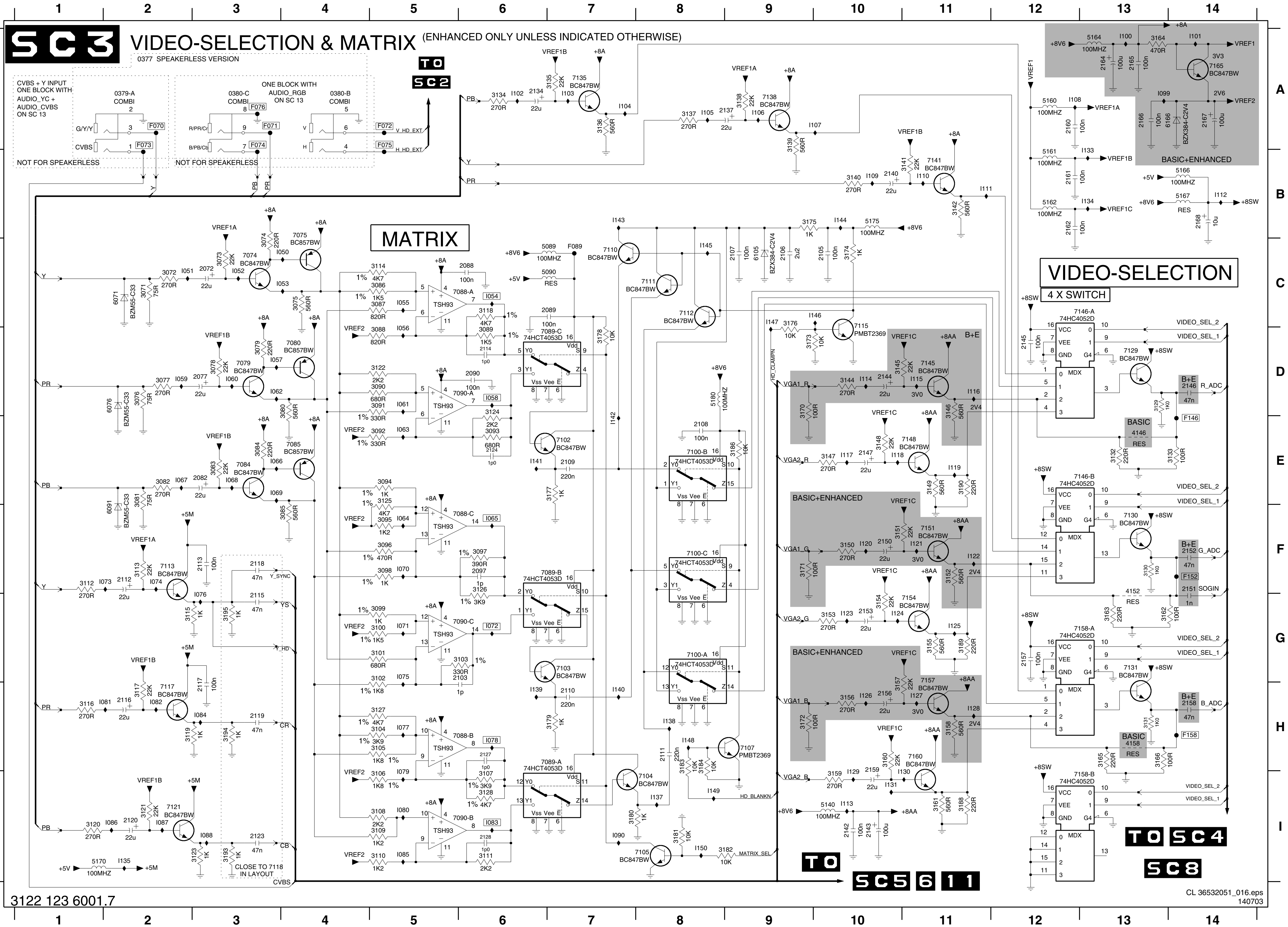

SC1
SCAVIO PANEL (FUNCTION BLOCKS AND DIAGRAM CONNECTIONS)
+5V
+3V3
VREF1
+8V6
+5V_STBY_SW
+3V3_STBY_SW
+5V_POW
+2V5
+9V_STBY
SC2 SYNC-PROCESSING
SC3 VIDEO SELECTION MATRIX
SC4 VIDEO SELECTION ADC
SC5 VIDEO DECODER
VIDEO_SELECTION_AND_AQUISITION
SC9 SCALER-CLOCK-GENERATOR
SC10 SCALER-PW164 +MEMORY
SCALER_AND_CONTROL
SC13 SOURCE_SELECT
SC14 AUDIO PROCESSOR
SC15 AUDIO_DELAY_LINE
AUDIO_PROCESSOR_FUNCTION
SC6 VGA-INPUT
SC7 CONTROL-FUNCTIONS
SC8 CONTROL_FUNCTIONS
MAIN_CONTROL
SC11 BACK-END EPLD
SC12 BACK-END LVDS-OUTPUT
BACK_END
GND
VGA2_OUTN
VGA1_H
VGA1_V
VGA2_H
VGA2_V
VGA2_EN
VGA2_OUT
VGA1_R
VGA1_G
VGA1_B
VGA2_R
VGA2_G
VGA2_B
GR_CLK
GR_ADDE
ALT_GR_ADDE
TV_MODE
V_SYNC_POL_N
V_SYNC_TTL
H_SYNC_POL_N
H_SYNC_TTL
75OHM_ON
V_SYNC_CMP
H_SYNC_CMP
V_SYNC_LM
C_SYNC_LM
C_SYNC_OUT
H_PRESENT
H_HD
V_HD
SYNC_SEL
MATRIX_SEL
VIDEO_SEL_1
VIDEO_SEL_2
HD_BLANKN
HD_CLAMPN
ADHS
GCLK
ADVS
ADSOG
ADDE
GCOAST
GBLKSPL
GRE(0:7)
GGE(0:7)
GBE(0:7)
GRO(0:7)
GGO(0:7)
GBO(0:7)
Y_OUT(0:7)
UV_OUT(0:7)
PW_SCL
PW_SDA
CLKOUT_DEINT
VPEN
VOUT_DEINT
HOUT_DEINT
VFIELD_DEC
VIDCLK
H_HD_EXT
V_HD_EXT
H_ADC
V_ADC
R_ADC
G_ADC
B_ADC
CVBS
YS
CB
CR
Y_SYNC
SDA_1
SCL_1
VXCA_18M432
SDA_SW
SCL_SW
D(0:15)
A(0:19)
DCKEXT
MCLK
BOOTWE
ROMOE
ROMWE
PW_SCL_NVM
PW_SDA_NVM
PW_RESET
DRE(0:7)
DGE(0:7)
DBE(0:7)
PARITY
DEN
DHS
DVS
DCLK
VGA2_EN
VGA2_OUT
PW_START
TXD_PW
RXD_PW
SDA_2
SCL_2
SYNC
1_2FH
PW_FLASH_RESET
FBX_MODE
POWER_OK
MSP_RESET
PRE_OUT2_L
PRE_OUT1_L
SCL_AUDIO
SDA_AUDIO
PRE_OUT2_R
PRE_OUT1_R
D_CTR_NIL
SC1_R
SC1_L
AUDIO_ENABLE
D_CTR_ONE
I2S_CLOCK
I2S_DATA_OUT
I2S_DATA_IN1
I2S_DATA_IN2
TXD_OTC
RXD_OTC
RC
RS_232_ACT
SYNC_ACT
UART_ACT
IRQ_PDP
CPU_GO
PDP_GO
SELECT_1
SELECT_2
SELECT_3
SELECT_4
IR_TX
RL_ICN
GL_ICN
LD_ICN
IR_RX
ICONN_ON
LIGHT_SEN_IN
POWER_OK
STANDBY
GRN_LED
RED_LED
PSU_PROT
FAN_SP_1
FAN_SP_2
PSU_IRQ
POWER_DOWN
R_OUT(0:7)
G_OUT(0:7)
B_OUT(0:7)
PARITY_OUT
H_SYNC_OUT
V_SYNC_OUT
BLANK_OUT
SDA_1_3V3
SCL_1_3V3
PWRDWN_LVDS
POWER_DOWN_EPLD
3122 123 6001.7
CL 36532051_014.eps
200603

SCAVIO Panel: Sync Selection & Switching


SC2
SYNC SELECTION
& SWITCHING
(ENHANCED ONLY UNLESS INDICATED OTHERWISE)
SC3
SC6 10
11
TO SC3 4 6 8 10
SWITCH
SWITCH
+5V
5000
100MHZ
I000
2000
100n
3000
470K
I002
2001
100n
7000
BC847BW
7001
BC847BW
7002
BC847BW
I003
V_SYNC_TTL
I004
V_HD_EXT
3002
100R
I005
2002
2u2
2008
47p
3003
4K7
3004
470K
3005
220K
2003
100n
V_SYNC_POL_N
I006
6001
BZM55-C33
3001
75R
7006
BC847BW
I007
H_SYNC_TTL
I009
75OHM_ON
3006
10K
I008
2004
2u2
H_HD_EXT
3011
100R
I010
2012
100n
2015
47p
3012
4K7
3013
470K
3014
220K
2014
10n
3008
470K
H_SYNC_POL_N
I011
6010
BZM55-C33
3010
75R
7010
BC847BW
I012
75OHM_ON
3015
10K
I013
2005
2u2
+5V
5020
100MHZ
I014
2020
100n
3020
100K
3026
1K
7025-B
LM319D
V_SYNC_CMP
I020
V_HD_EXT
2021
470n
I019
3021
4K7
I018
3022
2K2
3025
2K2
I023
3024
100K
I024
3023
22K
2022
100n
6022
BAT254
3030
100K
3035
1K
7025-A
LM319D
H_SYNC_CMP
I032
H_HD_EXT
2030
470n
I031
3033
4K7
I030
3031
2K2
3036
2K2
I034
3034
100K
I035
3032
22K
2034
10n
6034
BAT254
GND
VGA2_V
V_HD
VGA1_V
VGA2_OUTN
VGA2_EN_NOT
VGA2_H
H_HD
VGA1_H
H_PRESENT
C_SYNC_LM
I021
V_SYNC_LM
I029
BASIC
4006
RES
BASIC
4007
RES
7007-A
74HCT4053D
E Vee Vss
Z
S
Vdd
Y1
Y0
+5A
I041
6019
BZX384-C2V4
3019
10K
7007-C
74HCT4053D
I040
6007
BZX384-C2V4
3007
10K
3041
2K2
I017
3040
3K3
+5B
SYNC. SLICER
7040
LM1881M
VS
O|E-FI
RSET
BG|BP
CSYNC
VIN
VSYNC
GND
3045
470K
RES
2040
100n
2041
100n
3042
220K
I039
2042
100n
I025
+5B
7041
BC847BW
3051
1K
I022
3050
1K
3043
2K2
I027
3044
3K3
+5V
5060
100MHZ
I033
+5B
2060
100n
SHIELDING 3.3
1001
SHIELDING 3.3
1002
SHIELDING 3.3
1003
+5A
I001
5007
100MHZ
2007
100n
7007-B
74HCT4053D
+5V
6009
BAT254
5009
100MHZ
I038
2009
100n
7009-A
74HC4052D
VCC
VEE
GND
MDX
BASIC
4010
VIDEO_SEL_2
SYNC_SEL
V_ADC
7009-B
74HC4052D
BASIC
4009
H_ADC
+3V3_STBY_SW
3066
1K0
2066
100n
I015
VGA2_OUTN
3065
10K
I016
7065
BC847BW
VGA2_OUT
Y_HD
+5B
3052
1K
3054
2K2
I026
C_SYNC_OUT
3053
1K
+3V3_STBY_SW
I028
3061
4K7
2061
100n
I036
3060
10K
I037
7060
BC847BW
VGA2_EN_NOT
VGA2_EN
VGA2_EN_NOT
3122 123 6001.7
CL 36532051_015.eps
140703
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

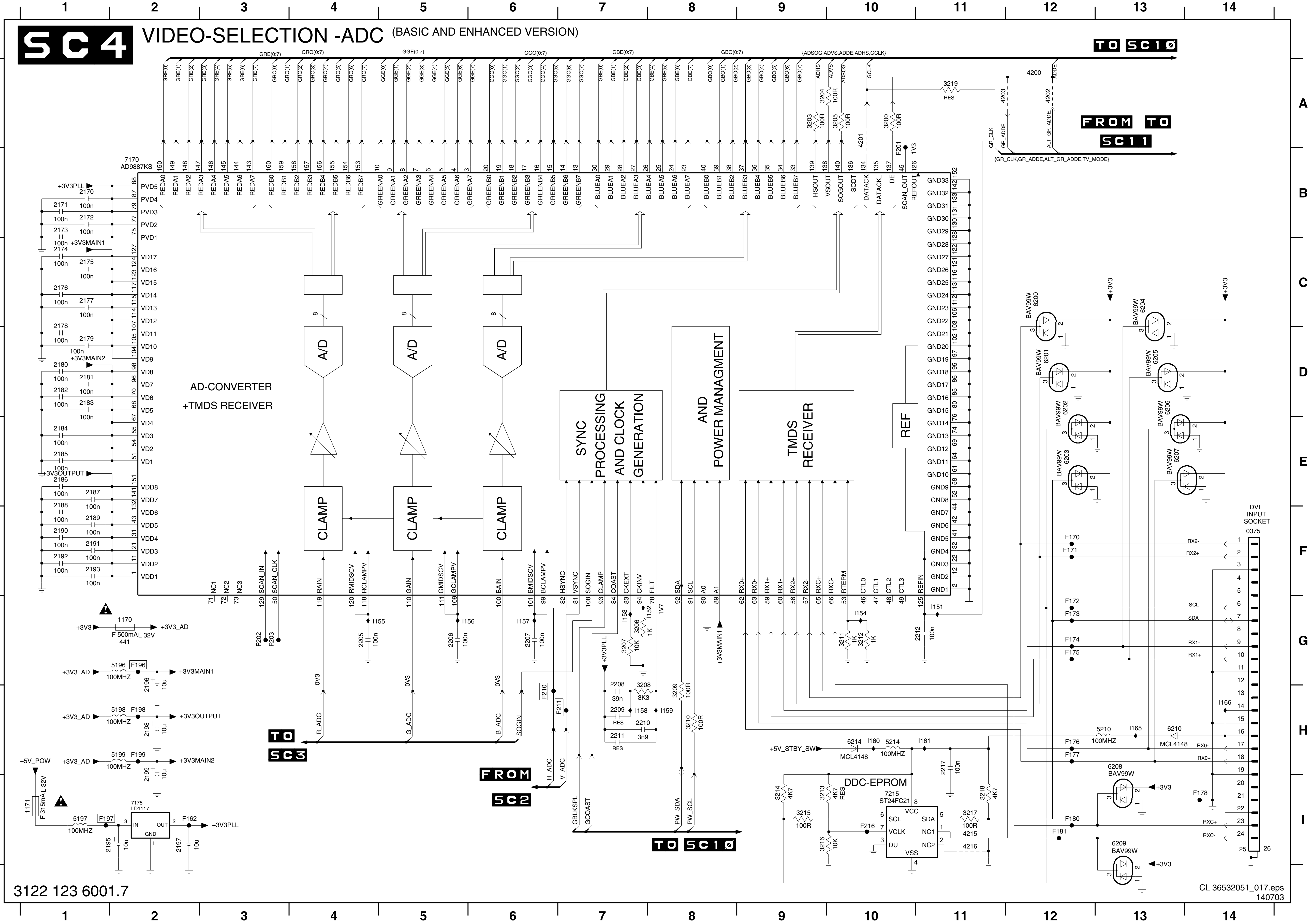
1001	I7
1002	I7
1003	I8
2000	A3
2001	B4
2002	C5
2003	C6
2004	D2
2005	E2
2007	F11
2008	C5
2009	B12
2012	D5
2014	E6
2015	E5
2020	F5
2021	F4
2022	G4
2030	H4
2034	I4
2040	G8
2041	G8
2042	G9
2060	I10
2061	H13
2066	E14
3000	A4
3001	C2
3002	C4
3003	C5
3004	C5
3005	C6
3006	D2
3007	E10
3008	E6
3010	E2
3011	D4
3012	E4
3013	E5
3014	D6
3015	E2
3019	B9
3020	F4
3021	F4
3022	G4
3023	G4
3024	G4
3025	G6
3026	F6
3030	H4
3031	H4
3032	I4
3033	H4
3034	H4
3035	H6
3036	H6
3040	G7
3041	F8
3042	G8
3043	H8
3044	H7
3045	G9
3050	G11
3051	G10
3052	G12
3053	H12
3054	G12
3060	I12
3061	H13
3065	F13
3066	E13
4006	B8
4007	D8
4009	E13
4010	C13
5000	A3
5007	F11
5009	A12
5020	E5
5060	H10
6001	C1
6007	E9
6009	C11
6010	E1
6019	B9
6022	G5
6034	I5
7000	B4
7001	B5
7002	B6
7006	C2
7007-A	A9
7007-B	F11
7007-C	C9
7009-A	A13
7009-B	C13
7010	E2
7025-A	H5
7025-B	F5
7040	G9
7041	G10
7060	I13
7065	F13
I000	A3
I001	F11
I002	A4
I003	B6
I004	B6
I005	C5
I006	C6
I007	C3
I008	D2
I009	D6
I010	D4
I011	D6
I012	E3
I013	E2
I014	E5
I015	F13
I016	F13
I017	F8
I018	F5
I019	F4
I020	F6
I021	F7
I022	G10
I023	G4
I024	G4
I025	G10
I026	G11
I027	H8
I028	H13
I029	H7
I030	H5
I031	H4
I032	H6
I033	H10
I034	H4
I035	H4
I036	H13
I037	I12
I038	A12
I039	G9
I040	D10
I041	A10

SCAVIO Panel: Video Selection & Matrix


SC3
VIDEO-SELECTION & MATRIX (ENHANCED ONLY UNLESS INDICATED OTHERWISE)
0377 SPEAKERLESS VERSION
CVBS + Y INPUT ONE BLOCK WITH AUDIO_YC + AUDIO_CVBS ON SC 13
0379-A COMBI
ONE BLOCK WITH AUDIO_RGB ON SC 13
0380-C COMBI
0380-B COMBI
NOT FOR SPEAKERLESS
TO SC2
MATRIX
VIDEO-SELECTION
4 X SWITCH
BASIC+ENHANCED
B+E
BASIC
RES
7088-A TSH93
7088-B TSH93
7088-C TSH93
7090-A TSH93
7090-B TSH93
7090-C TSH93
7089-A 74HCT4053D
7089-B 74HCT4053D
7089-C 74HCT4053D
7100-A 74HCT4053D
7100-B 74HCT4053D
7100-C 74HCT4053D
7146-A 74HC4052D
7146-B 74HC4052D
7158-A 74HC4052D
7158-B 74HC4052D
VIDEO_SEL_1
VIDEO_SEL_2
R_ADC
G_ADC
B_ADC
SOGIN
HD_CLAMPN
HD_BLANKN
MATRIX_SEL
VGA1_R
VGA2_R
VGA1_G
VGA2_G
VGA1_B
VGA2_B
VREF1
VREF2
VREF1A
VREF1B
VREF1C
CLOSE TO 7118 IN LAYOUT
CVBS
TO SC4 SC8
TO SC5 6 11
3122 123 6001.7
CL 36532051_016.eps
140703
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

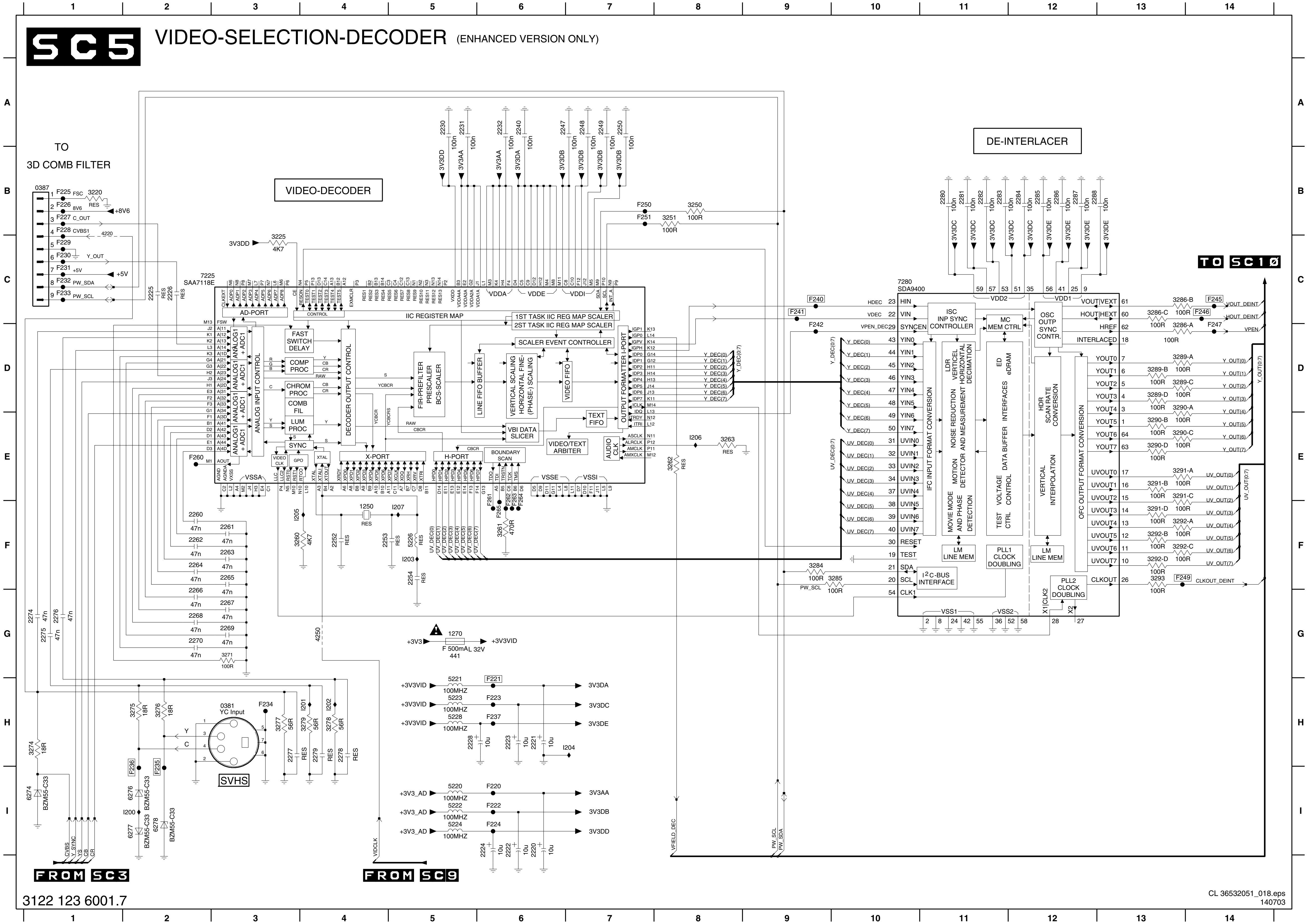
0377 A2
0379-A A2
0380-B A4
0380-C A3
2072 C3
2077 D3
2082 E3
2088 C6
2089 C7
2090 D6
2097 F6
2103 G6
2105 C10
2106 C9
2107 C9
2108 E8
2109 E7
2110 H7
2111 H8
2112 F2
2113 F3
2114 D6
2115 G3
2116 H2
2117 H3
2118 F3
2119 H3
2120 I2
2123 I3
2124 E6
2127 H6
2128 I6
2134 A6
2137 A9
2140 B10
2142 I10
2143 I10
2144 D10
2145 D12
2146 D14
2147 E10
2150 F10
2151 F14
2152 F14
2153 G10
2156 H10
2157 G12
2158 H14
2159 I10
2160 A12
2161 B12
2162 B12
2164 A13
2165 A13
2166 A13
2167 A14
2168 B14
3071 C2
3072 C2
3073 C3
3074 C3
3075 C4
3076 D2
3077 D2
3078 D3
3079 D3
3080 D4
3081 E2
3082 E2
3083 E3
3084 E3
3085 F4
3086 C5
3087 C5
3088 D5
3089 D6
3090 D5
3091 D5
3092 E5
3093 E6
3094 E5
3095 F5
3096 F5
3097 F6
3098 F5
3099 G5
3100 G5
3101 G5
3102 G5
3103 G6
3104 H5
3105 H5
3106 I5
3107 I6
3108 I5
3109 I5
3110 I5
3111 I6
3112 F1
3113 F2
3114 C5
3115 G2
3116 H1
3117 H2
3118 C6
3119 H2
3120 I1
3121 I2
3122 D5
3123 I3
3124 D6
3125 E5
3126 F6
3127 H5
3128 I6
3129 D13
3130 F13
3131 H13
3132 E13
3133 E14
3134 A6
3135 A7
3136 A7
3137 A8
3138 A9
3139 A9
3140 B10
3141 B11
3142 B11
3144 D10
3145 D10
3146 D11
3147 E10
3148 E10
3149 E11
3150 F10
3151 F10
3152 F11
3153 G10
3154 G10
3155 G11
3156 H10
3157 H10
3158 H11
3159 I10
3160 H10
3161 I11
3162 G13
3163 G13
3164 A13
3165 H13
3166 H13
3170 D9
3171 F9
3172 H9
3173 D9
3174 C10
3175 B9
3176 C9
3177 E7
3178 D7
3179 H7
3180 I7
3181 I8
3182 I9
3183 H8
3184 H8
3186 E9
3188 I11
3189 G11
3190 E11
3193 I3
3194 H3
3195 G3
4146 E13
4152 G13
4158 H13
5089 C7
5090 C7
5140 I10
5160 A12
5161 B12
5162 B12
5164 A13
5166 B14
5167 B14
5170 I1
5175 B10
5180 D8
6071 C2
6076 D2
6091 F2
6105 C9
6166 A14
7074 C3
7075 B4
7079 D3
7080 D4
7084 E3
7085 E4
7088-A C5
7088-B H5
7088-C F5
7089-A H7
7089-B F7
7089-C D7
7090-A D5
7090-B I5
7090-C G5
7100-A G8
7100-B E8
7100-C F8
7102 E7
7103 G7
7104 I8
7105 I8
7107 H9
7110 C7
7111 C8
7112 C8
7113 F2
7115 D10
7117 H2
7121 I2
7129 D13
7130 F13
7131 G13
7135 A7
7138 A9
7141 B11
7145 D11
7146-A C13
7146-B E13
7148 E10
7151 F11
7154 G10
7157 H11
7158-A G13
7158-B I13
7160 H11
7165 A14
F070 A2
F071 A3
F072 A5
F073 A2
F074 A3
F075 A5
F076 A3
F089 C7
F146 E14
F152 F14
F158 H14
I050 C4
I051 C2
I052 C3
I053 C4
I054 C6
I055 C5
I056 D5
I057 D3
I058 D6
I059 D2
I060 D3
I061 D5
I062 D3
I063 E5
I064 F5
I065 F6
I066 E3
I067 E2
I068 E3
I069 E3
I070 F5
I071 G5
I072 G6
I073 F2
I074 F2
I075 G5
I076 G3
I077 H5
I078 H6
I079 I5
I080 I5
I081 H2
I082 H2
I083 I6
I084 H3
I085 I5
I086 I2
I087 I2
I088 I3
I090 I7
I099 A13
I100 A13
I101 A14
I102 A6
I103 A7
I104 A7
I105 A8
I106 A9
I107 A10
I108 A12
I109 B10
I110 B11
I111 B11
I112 B14
I113 I10
I114 D10
I115 D11
I116 D11
I117 E10
I118 E10
I119 E11
I120 F10
I121 F11
I122 F11
I123 G10
I124 G10
I125 G11
I126 H10
I127 H11
I128 H11
I129 I10
I130 I11
I131 I10
I133 B13
I134 B13
I135 I2
I137 I8
I138 H8
I139 H6
I140 H7
I141 E6
I142 E7
I143 B7
I144 B10
I145 C8
I146 C10
I147 C9
I148 H8
I149 I8
I150 I8

SCAVIO Panel: Video Selection ADC


SC4
VIDEO-SELECTION -ADC (BASIC AND ENHANCED VERSION)
TO SC10
FROM TO SC11
7170 AD9887KS
AD-CONVERTER
+TMDS RECEIVER
A/D
CLAMP
SYNC PROCESSING AND CLOCK GENERATION
AND POWER MANAGMENT
TMDS RECEIVER
REF
TO SC3
FROM SC2
TO SC10
DDC-EPROM
7215 ST24FC21
7175 LD1117
DVI INPUT SOCKET 0375
BAV99W
+3V3PLL
+3V3MAIN1
+3V3MAIN2
+3V3OUTPUT
+3V3_AD
+5V_POW
+5V_STBY_SW
1170 F 500mAL 32V 441
1171 F 315mAL 32V
R_ADC
G_ADC
B_ADC
H_ADC
V_ADC
SOGIN
GBLKSPL
GCOAST
PW_SDA
PW_SCL
RX0- RX0+ RX1- RX1+ RX2- RX2+ RXC+ RXC-
SCL SDA
3122 123 6001.7
CL 36532051_017.eps 140703

0375	F14
1170	G2
1171	I1
2170	B1
2171	B1
2172	B1
2173	B1
2174	C1
2175	C1
2176	C1
2177	C1
2178	D1
2179	D1
2180	D1
2181	D1
2182	D1
2183	D1
2184	E1
2185	E1
2186	E1
2187	E1
2188	F1
2189	F1
2190	F1
2191	F1
2192	F1
2193	F1
2195	I2
2196	G2
2197	I2
2198	H2
2199	H2
2205	G4
2206	G5
2207	G6
2208	H7
2209	H7
2210	H7
2211	H7
2212	G11
2217	H11
3200	A10
3203	A9
3204	A9
3205	A10
3206	G7
3207	G7
3208	H7
3209	H8
3210	H8
3211	G10
3212	G10
3213	I9
3214	I9
3215	I9
3216	I9
3217	I11
3218	I11
3219	A11
4200	A12
4201	A10
4202	A12
4203	A11
4215	I11
4216	I11
5196	G2
5197	I1
5198	H2
5199	H2
5210	H13
5214	H10
6200	C12
6201	D12
6202	D12
6203	E12
6204	C13
6205	D13
6206	D13
6207	E13
6208	H13
6209	I13
6210	H13
6214	H10
7170	B2
7175	I2
7215	I10
F162	I2
F170	F12
F171	F12
F172	G12
F173	G12
F174	G12
F175	G12
F176	H12
F177	H12
F178	I14
F180	I12
F181	I12
F196	G2
F197	I1
F198	H2
F199	H2
F201	B10
F202	G3
F203	G3
F210	H6
F211	H7
F216	I10
I151	G11
I152	G8
I153	G7
I154	G10
I155	G5
I156	G6
I157	G6
I158	H7
I159	H8
I160	H10
I161	H11
I165	H13
I166	H14

SCAVIO Panel: Video Selection Decoder

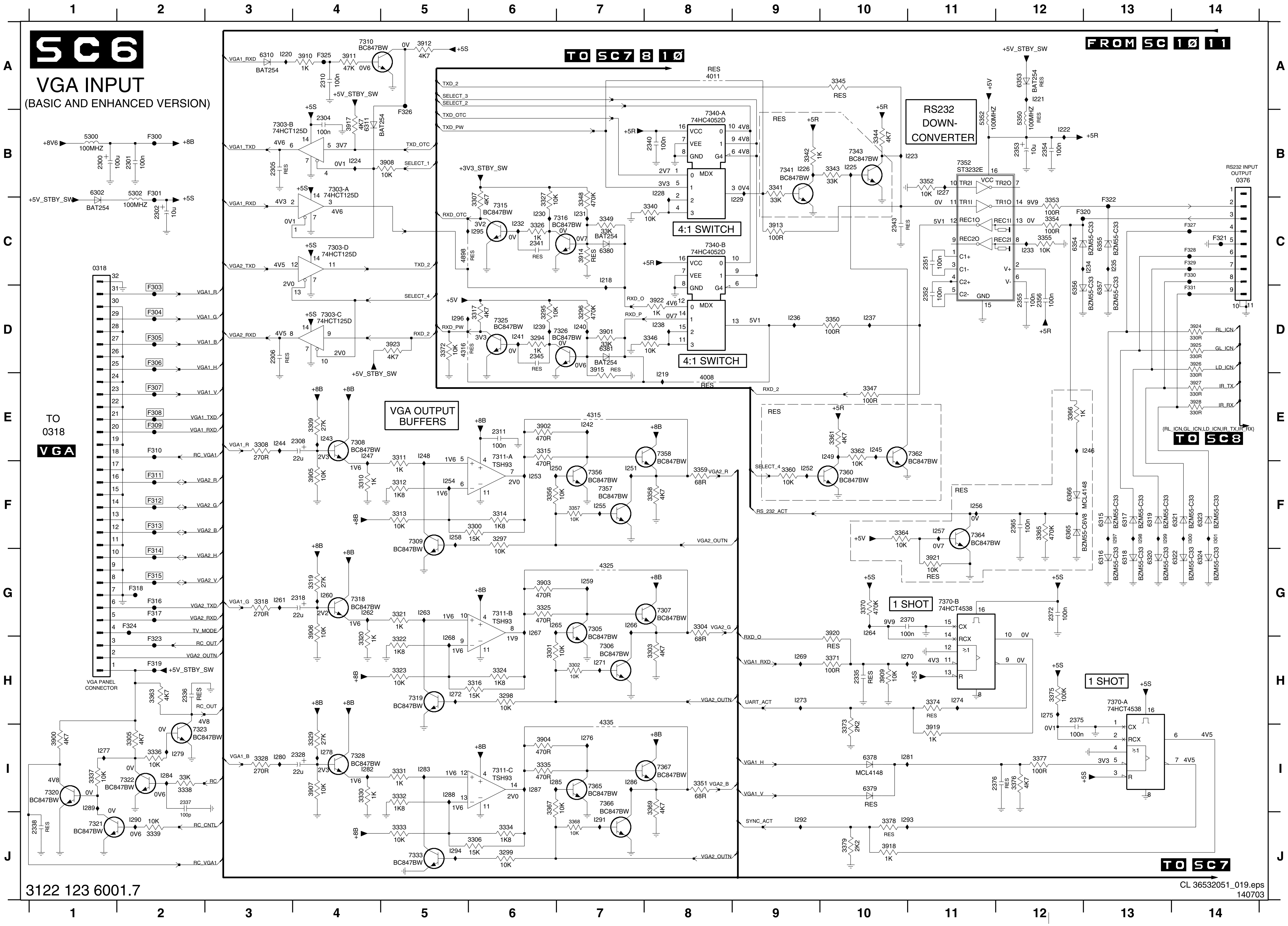

SC5
VIDEO-SELECTION-DECODER (ENHANCED VERSION ONLY)
TO
3D COMB FILTER
0387
VIDEO-DECODER
7225
SAA7118E
AD-PORT
IIC REGISTER MAP
1ST TASK IIC REG MAP SCALER
2ST TASK IIC REG MAP SCALER
SCALER EVENT CONTROLLER
FAST SWITCH DELAY
COMP PROC
CHROM PROC
COMB FIL
LUM PROC
SYNC
ANALOG INPUT CONTROL
DECODER OUTPUT CONTROL
FIR-PREFILTER PRESCALER BCS-SCALER
LINE FIFO BUFFER
VERTICAL SCALING HORIZONTAL FINE-(PHASE-) SCALING
VIDEO FIFO
OUTPUT FORMATTER I-PORT
TEXT FIFO
VBI DATA SLICER
VIDEO/TEXT ARBITER
AUDIO CLK
X-PORT
H-PORT
BOUNDARY SCAN
VSSA
VSSE
VSSI
VDDA
VDDE
VDDI
DE-INTERLACER
7280
SDA9400
ISC INP SYNC CONTROLLER
MC MEM CTRL
OSC OUTP SYNC CONTR.
IFC INPUT FORMAT CONVERSION
MOVIE MODE AND PHASE DETECTION
MOTION DETECTOR AND MEASUREMENT
NOISE REDUCTION
LDR VERTICAL HORIZONTAL DECIMATION
TEST CTRL
VOLTAGE CONTROL
DATA BUFFER
INTERFACES
ED eDRAM
HDR SCAN RATE CONVERSION
VERTICAL INTERPOLATION
OFC OUTPUT FORMAT CONVERSION
LM LINE MEM
PLL1 CLOCK DOUBLING
PLL2 CLOCK DOUBLING
I2C-BUS INTERFACE
VSS1
VSS2
VDD2
VDD1
TO SC10
0381
YC Input
SVHS
1270
F 500mAL 32V
441
+3V3
+3V3VID
3V3DA
3V3DC
3V3DE
+3V3_AD
3V3AA
3V3DB
3V3DD
100MHZ
BZM55-C33
FROM SC3
FROM SC9
CVBS
Y_SYNC
YS
CB
CR
VIDCLK
VFIELD_DEC
PW_SCL
PW_SDA
VOUT_DEINT
HOUT_DEINT
VPEN
Y_OUT(0:7)
UV_OUT(0:7)
CLKOUT_DEINT
Y_DEC(0:7)
UV_DEC(0:7)

3122 123 6001.7

CL 36532051_018.eps
140703

0381	H3
0387	B1
1250	F4
1270	G5
2220	I6
2221	H6
2222	I6
2223	H6
2224	I6
2225	C2
2226	C2
2228	H5
2230	A5
2231	A5
2232	A6
2240	A6
2247	A6
2248	A7
2249	A7
2250	A7
2252	F4
2253	F4
2254	F5
2260	F2
2261	F3
2262	F2
2263	F3
2264	F2
2265	F3
2266	G2
2267	G3
2268	G2
2269	G3
2270	G2
2274	G1
2275	G1
2276	G1
2277	H3
2278	H4
2279	H4
2280	B11
2281	B11
2282	B11
2283	B11
2284	B12
2285	B12
2286	B12
2287	B12
2288	B12
3220	B1
3225	C3
3250	B8
3251	B8
3260	F3
3261	F6
3262	E8
3263	E8
3271	G3
3274	H1
3275	H2
3276	H2
3277	H3
3278	H4
3279	H4
3284	F9
3285	F10
3286-A	D13
3286-B	C13
3286-C	C13
3289-A	D13
3289-B	D13
3289-C	D13
3289-D	D13
3290-A	D13
3290-B	E13
3290-C	E13
3290-D	E13
3291-A	E13
3291-B	E13
3291-C	E13
3291-D	F13
3292-A	F13
3292-B	F13
3292-C	F13
3292-D	F13
3293	F13
4220	C1
4250	G4
5220	I5
5221	H5
5222	I5
5223	H5
5224	I5
5226	F5
5228	H5
6274	I1
6276	I2
6277	I2
6278	I2
7225	C3
7280	C10
F220	I6
F221	H6
F222	I6
F223	H6
F224	I6
F225	B1
F226	B1
F227	B1
F228	B1
F229	C1
F230	C1
F231	C1
F232	C1
F233	C1
F234	H3
F235	I2
F236	I2
F237	H6
F240	C9
F241	C9
F242	D9
F245	C14
F246	C14
F247	D14
F249	F13
F250	B7
F251	B7
F260	E2
F261	E6
F262	E6
F263	E6
F264	E6
F265	F6
I200	I2
I201	H4
I202	H4
I203	F5
I204	H7
I205	F3
I206	E8
I207	F5

SCAVIO Panel: VGA Input

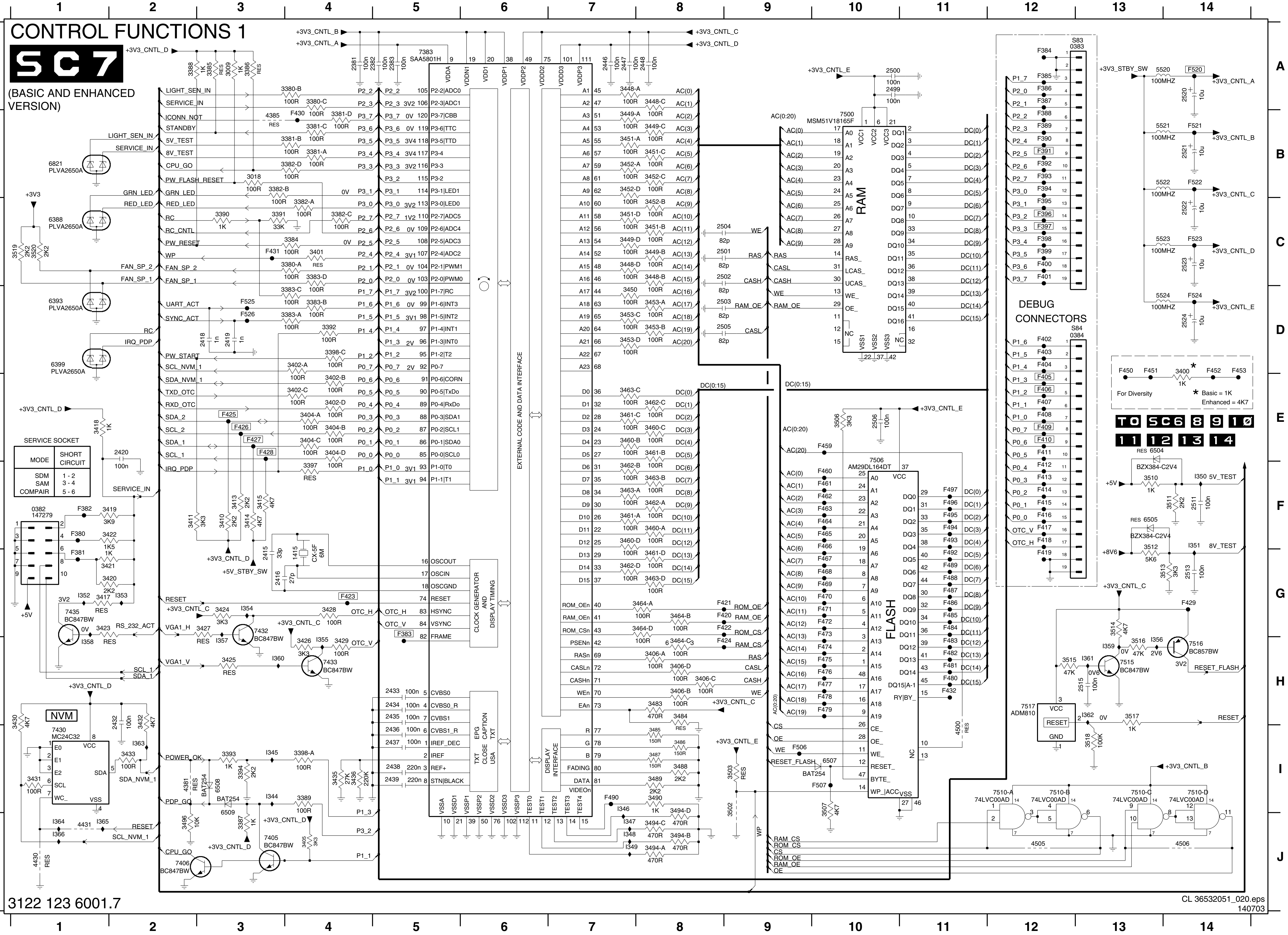


3122 123 6001.7

CL 36532051_019.eps
140703

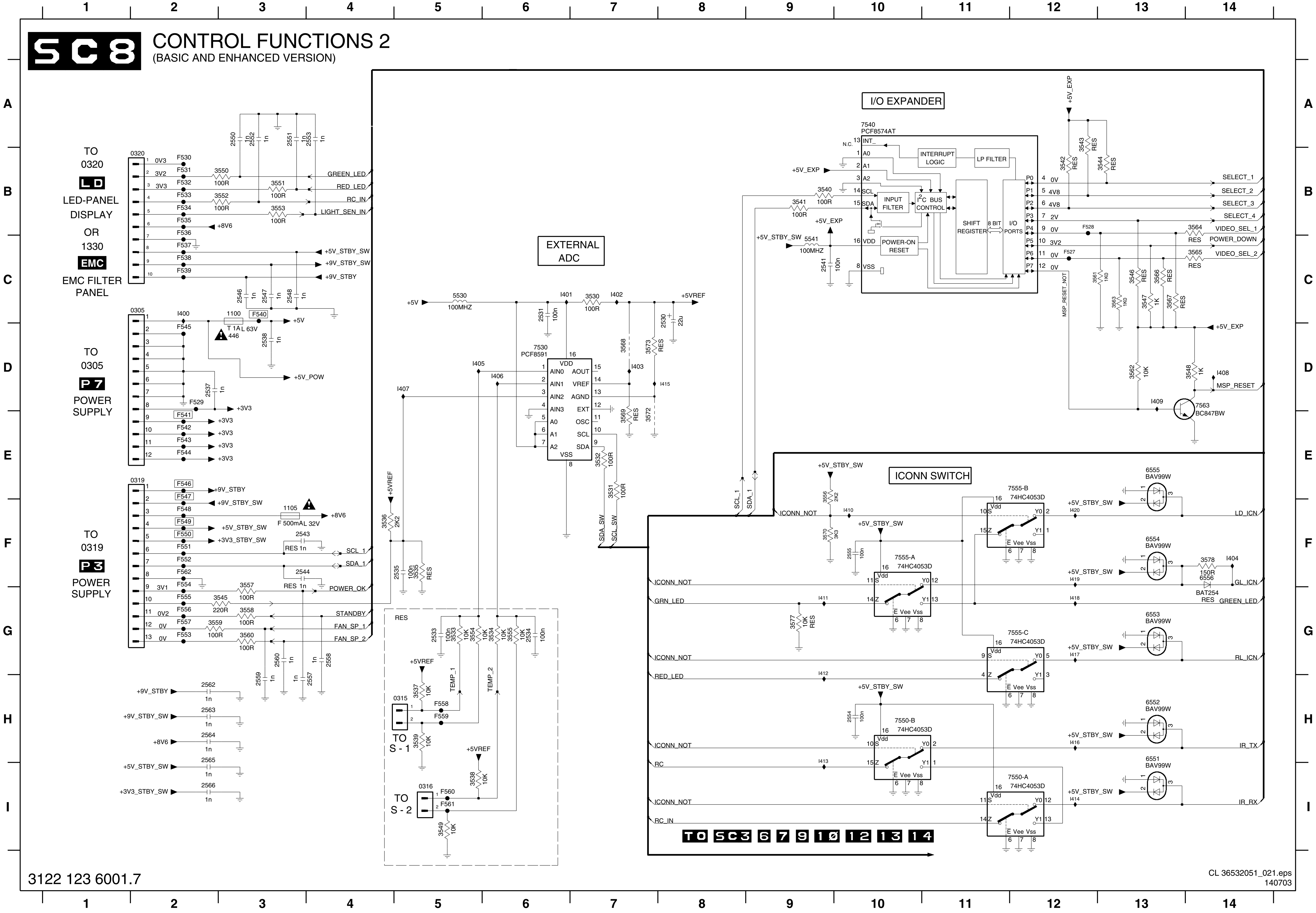
0318	C1
0376	B14
2300	B1
2301	B2
2302	B2
2304	B4
2305	B3
2306	D3
2308	E4
2310	A4
2311	E6
2318	G4
2328	I4
2335	H10
2336	H2
2337	I2
2338	J1
2340	B8
2341	C6
2343	C10
2345	D6
2351	C11
2352	D11
2353	B12
2354	B12
2355	D12
2356	D12
2365	F12
2370	G10
2372	G12
2375	H12
2376	I12
3294	D6
3295	D6
3296	D7
3297	F6
3298	H6
3299	J6
3300	F6
3301	H6
3302	H7
3303	H8
3304	G8
3305	I2
3306	J6
3307	C6
3308	E3
3309	E4
3310	F4
3311	E5
3312	F5
3313	F5
3314	F6
3315	E6
3316	H6
3317	D6
3318	G3
3319	G4
3320	H4
3321	G5
3322	H5
3323	H5
3324	H6
3325	G6
3326	C6
3327	C6
3328	I3
3329	I4
3330	I4
3331	I5
3332	I5
3333	J5
3334	J6
3335	I6
3336	I2
3337	I1
3338	I2
3339	J2
3340	C8
3341	B9
3342	B9
3343	B10
3344	B10
3345	A10
3346	D8
3347	E10
3348	C7
3349	C7
3350	D10
3351	I8
3352	B11
3353	C12
3354	C12
3355	C12
3356	F6
3357	F7
3358	F8
3359	F8
3360	F9
3361	E10
3362	E10
3363	H2
3364	F10
3365	F12
3366	E12
3367	I6
3368	J7
3369	I8
3370	G10
3371	H10
3372	D5
3373	I10
3374	H11
3375	H12
3376	I12
3377	I12
3378	J10
3379	J10
3900	I1
3901	D7
3902	E6
3903	G6
3904	I6
3905	F4
3906	G4
3907	I4
3908	B5
3909	H10
3910	A4
3911	A4
3912	A5
3913	C9
3914	C7
3915	D7
3917	B4
3918	J10
3919	I11
3920	G10
3921	G11
3922	D8
3923	D5
3924	D14
3925	D14
3926	D14
3927	E14
3928	E14
4008	E8
4011	A8
4315	E7
4316	D5
4325	G7
4335	I7
4898	C5
5300	B1
5302	B2
5350	B12
5352	B11
6302	B1
6310	A3
6311	B4
6315	F13
6316	G13
6317	F13
6318	G13
6319	F13
6320	G13
6321	F14
6322	G14
6323	F14
6324	G14
6353	A12
6354	C12
6355	C13
6356	D12
6357	D13
6365	F12
6366	F12
6378	I10
6379	I10
6380	C7
6381	D7
7303-A	B4
7303-B	B4
7303-C	D4
7303-D	C4
7305	G7
7306	H7
7307	G8
7308	E4
7309	F5
7310	A4
7311-A	E6
7311-B	G6
7311-C	I6
7315	C6
7316	C7
7318	G4
7319	H5
7320	I1
7321	J1
7322	I2
7323	I2
7325	D6
7326	D7
7328	I4
7333	J5
7340-A	B8
7340-B	C8
7341	B9
7343	B10
7352	B11
7356	F7
7357	F7
7358	E8
7360	F10
7362	E11
7364	F11
7365	I7
7366	I7
7367	I8
7370-A	H13
7370-B	G11
F300	B2
F301	B2
F303	D2
F304	D2
F305	D2
F306	D2
F307	E2
F308	E2
F309	E2
F310	E2
F311	F2
F312	F2
F313	F2
F314	G2
F315	G2
F316	G2
F317	G2
F318	G2
F319	H2
F320	C12
F321	C14
F322	C13
F323	H2
F324	G2
F325	A4
F326	B5
F327	C14
F328	C14
F329	C14
F330	C14
F331	D14
I218	C7
I219	E8
I220	A3
I221	A12
I222	B12
I223	B11
I224	B4
I225	B10
I226	B9
I227	B11
I228	B8
I229	C9
I230	C6
I231	C7
I232	C6
I233	C12
I234	C13
I235	C13
I236	D9
I237	D10
I238	D8
I239	D6
I240	D7
I241	D6
I242	E7
I243	E4
I244	E3
I245	E10
I246	E13
I247	E4
I248	E5
I249	E10
I250	F6
I251	F7
I252	F9
I253	F6
I254	F5
I255	F7
I256	F11
I257	F11
I258	F5
I259	G7
I260	G4
I261	G3
I262	G4
I263	G5
I264	G10
I265	G6
I266	G7
I267	G6
I268	H5
I269	H9
I270	H10
I271	H7
I272	H5
I273	H9
I274	H11
I275	H12
I276	I7
I277	I1
I278	I4
I279	I2
I280	I3
I281	I10
I282	I4
I283	I5
I284	I2
I285	I6
I286	I7
I287	I6
I288	I5
I289	I1
I290	J2
I291	J7
I292	J9
I293	J10
I294	J5
I295	C6
I296	D5
I297	F13
I298	F13
I299	F13
I300	F14
I301	F14

SCAVIO Panel: Control Functions 1


CONTROL FUNCTIONS 1
SC7
(BASIC AND ENHANCED VERSION)
7383 SAA5801H
EXTERNAL CODE AND DATA INTERFACE
CLOCK GENERATOR AND DISPLAY TIMING
EPG CAPTION TXT CLOSE USA
DISPLAY INTERFACE
7500 MSM51V18165F
RAM
7506 AM29DL164DT
FLASH
DEBUG CONNECTORS
S83 0383
S84 0384
SERVICE SOCKET
MODE
SHORT CIRCUIT
SDM 1 - 2
SAM 3 - 4
COMPAIR 5 - 6
0382 147279
NVM
7430 MC24C32
7517 ADM810
7510-A 74LVC00AD
7510-B 74LVC00AD
7510-C 74LVC00AD
7510-D 74LVC00AD
6821 PLVA2650A
6388 PLVA2650A
6393 PLVA2650A
6399 PLVA2650A
7435 BC847BW
7432 BC847BW
7433 BC847BW
7405 BC847BW
7406 BC847BW
7515 BC847BW
7516 BC857BW
6504 BZX384-C2V4
6505 BZX384-C2V4
1415 CX-5F 6M
F450 F451 3400 1K F452 F453
For Diversity
* Basic = 1K Enhanced = 4K7
+3V3_CNTL_A
+3V3_CNTL_B
+3V3_CNTL_C
+3V3_CNTL_D
+3V3_CNTL_E
+3V3_STBY_SW
+5V_STBY_SW
LIGHT_SEN_IN
SERVICE_IN
ICONN_NOT
STANDBY
5V_TEST
8V_TEST
CPU_GO
PW_FLASH_RESET
GRN_LED
RED_LED
RC
RC_CNTL
PW_RESET
WP
FAN_SP_2
FAN_SP_1
UART_ACT
SYNC_ACT
IRQ_PDP
PW_START
SCL_NVM_1
SDA_NVM_1
TXD_OTC
RXD_OTC
SDA_2
SCL_2
SDA_1
SCL_1
RESET
VGA1_H
VGA1_V
RS_232_ACT
OTC_H
OTC_V
POWER_OK
PDP_GO
RESET_FLASH
ROM_OE
RAM_OE
ROM_CS
RAM_CS
RAS
CASL
CASH
WE
AC(0:20)
DC(0:15)
T0 SC6 8 9 10 11 12 13 14
3122 123 6001.7
CL 36532051_020.eps
140703

0382	F1
0383	A12
0384	D12
1415	G4
2381	A4
2382	A5
2383	A5
2415	G3
2416	G3
2418	D3
2419	D3
2420	E2
2432	H2
2433	H5
2434	H5
2435	H5
2436	I5
2437	I5
2438	I5
2439	I5
2446	A7
2447	A7
2448	A8
2499	A10
2500	A10
2501	C8
2502	C8
2503	D8
2504	C8
2505	D8
2506	E10
2511	F14
2513	G14
2515	H13
2520	A14
2521	B14
2522	C14
2523	C14
2524	D14
3009	A3
3018	B3
3380-A	C4
3380-B	A4
3380-C	A4
3381-A	B4
3381-B	B4
3381-C	B4
3381-D	B4
3382-A	C4
3382-B	B3
3382-C	C4
3382-D	B4
3383-A	D4
3383-B	D4
3383-C	D4
3383-D	C4
3384	C4
3385	A3
3386	A3
3387	J3
3388	A2
3389	I4
3390	C3
3391	C3
3392	D4
3393	I3
3394	I3
3397	F4
3398-A	I4
3398-C	D4
3400	D14
3401	C4
3402-A	D4
3402-B	E4
3402-C	E4
3402-D	E4
3404-A	E4
3404-B	E4
3404-C	E4
3404-D	E4
3405	J4
3406-A	H8
3406-B	H8
3406-C	H8
3406-D	H8
3410	F3
3411	F2
3413	F3
3414	F3
3415	F3
3417	G1
3418	E1
3419	F2
3420	G2
3421	G1
3422	F2
3423	G1
3424	G3
3425	H3
3426	H4
3427	G3
3428	G4
3429	H4
3430	H1
3431	I1
3432	H2
3433	I2
3435	I4
3436	I4
3448-A	A7
3448-B	C8
3448-C	A8
3448-D	C7
3449-A	B7
3449-B	C8
3449-C	B8
3449-D	C7
3450	D7
3451-A	B7
3451-B	C8
3451-C	B8
3451-D	C7
3452-A	B7
3452-B	C8
3452-C	B8
3452-D	B7
3453-A	D8
3453-B	D8
3453-C	D7
3453-D	D7
3460-A	F8
3460-B	E7
3460-C	E8
3460-D	F7
3461-A	F7
3461-B	E8
3461-C	E7
3461-D	G8
3462-A	F8
3462-B	F7
3462-C	E8
3462-D	G7
3463-A	F7
3463-B	F8
3463-C	E7
3463-D	G8
3464-A	G8
3464-B	G8
3464-C	H8
3464-D	G8
3483	H8
3484	H8
3485	I8
3486	I8
3487	I8
3488	I8
3489	I8
3490	I8
3494-A	J8
3494-B	J8
3494-C	J8
3494-D	I8
3496	J2
3502	I9
3503	I9
3506	E10
3507	I10
3510	F13
3511	F14
3512	F13
3513	G14
3514	G13
3515	H12
3516	H13
3517	H13
3518	I13
3519	C1
3520	C1
4381	I2
4385	B3
4430	J1
4431	J1
4500	I11
4505	J12
4506	J14
5520	A13
5521	B13
5522	B13
5523	C13
5524	D13
6388	C1
6393	D1
6399	D1
6504	E13
6505	F13
6507	I10
6508	I3
6509	J3
6821	B1
7383	A5
7405	J3
7406	J2
7430	I1
7432	G3
7433	H4
7435	G1
7500	B10
7506	F10
7510-A	I12
7510-B	I12
7510-C	I13
7510-D	I14
7515	H13
7516	H14
7517	H12
F380	F1
F381	G1
F382	F1
F383	G5
F384	A12
F385	A12
F386	A12
F387	A12
F388	B12
F389	B12
F390	B12
F391	B12
F392	B12
F393	B12
F394	B12
F395	C12
F396	C12
F397	C12
F398	C12
F399	C12
F400	C12
F401	C12
F402	D12
F403	D12
F404	D12
F405	E12
F406	E12
F407	E12
F408	E12
F409	E12
F410	E12
F411	E12
F412	F12
F413	F12
F414	F12
F415	F12
F416	F12
F417	F12
F418	F12
F419	G12
F420	G9
F421	G9
F422	G9
F423	G4
F424	H9
F425	E3
F426	E3
F427	E3
F428	E3
F429	G14
F430	B4
F431	C3
F432	H11
F450	D13
F451	D13
F452	D14
F453	D14
F459	E10
F460	F10
F461	F10
F462	F10
F463	F10
F464	F10
F465	F10
F466	F10
F467	G10
F468	G10
F469	G10
F470	G10
F471	G10
F472	G10
F473	G10
F474	H10
F475	H10
F476	H10
F477	H10
F478	H10
F479	H10
F480	H11
F481	H11
F482	H11
F483	H11
F484	G11
F485	G11
F486	G11
F487	G11
F488	G11
F489	G11
F490	I7
F492	G11
F493	F11
F494	F11
F495	F11
F496	F11
F497	F11
F506	I9
F507	I10
F520	A14
F521	B14
F522	B14
F523	C14
F524	D14
F525	D3
F526	D3
I344	I3
I345	I3
I346	I7
I347	J7
I348	J7
I349	J7
I350	F14
I351	F14
I352	G1
I353	G2
I354	G3
I355	H4
I356	H13
I357	H3
I358	H1
I359	H13
I360	H3
I361	H13
I362	H13
I363	I2
I364	J1
I365	J1
I366	J1

SCAVIO Panel: Control Functions 2

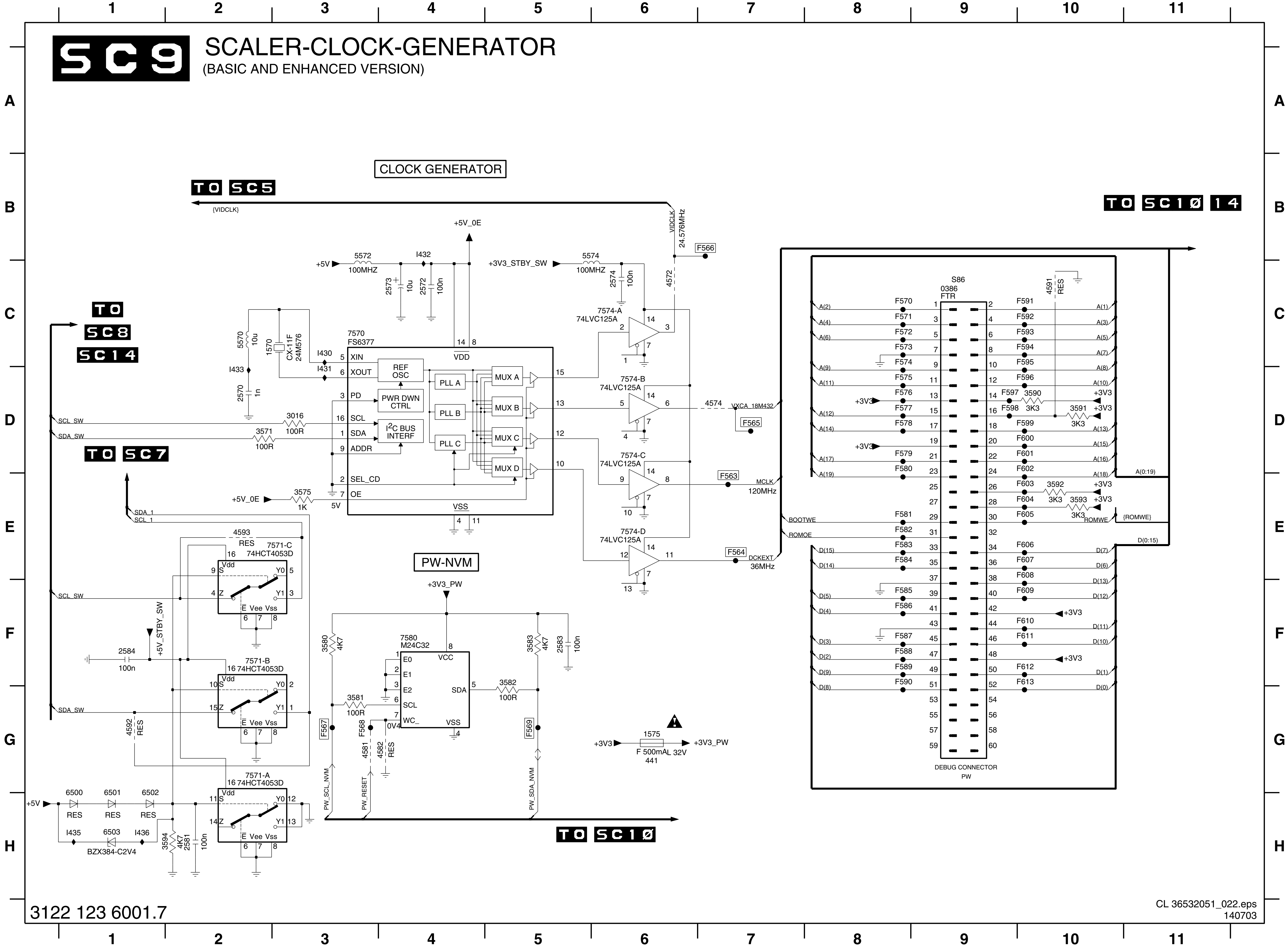

SC8
CONTROL FUNCTIONS 2
(BASIC AND ENHANCED VERSION)
I/O EXPANDER
7540
PCF8574AT
INTERRUPT LOGIC
LP FILTER
INPUT FILTER
I2C BUS CONTROL
SHIFT REGISTER
8 BIT
I/O PORTS
POWER-ON RESET
EXTERNAL ADC
7530
PCF8591
ICONN SWITCH
7555-A 74HC4053D
7555-B 74HC4053D
7555-C 74HC4053D
7550-A 74HC4053D
7550-B 74HC4053D
7563 BC847BW
6551 BAV99W
6552 BAV99W
6553 BAV99W
6554 BAV99W
6555 BAV99W
6556 BAT254
TO 0320
LD
LED-PANEL DISPLAY
OR
1330
EMC
EMC FILTER PANEL
TO 0305
P7
POWER SUPPLY
TO 0319
P3
POWER SUPPLY
TO S - 1
TO S - 2
GREEN_LED
RED_LED
RC_IN
LIGHT_SEN_IN
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
+5V
+5V_POW
+3V3
+8V6
+3V3_STBY_SW
SCL_1
SDA_1
POWER_OK
STANDBY
FAN_SP_1
FAN_SP_2
+5VREF
+5V_EXP
SELECT_1
SELECT_2
SELECT_3
SELECT_4
VIDEO_SEL_1
POWER_DOWN
VIDEO_SEL_2
MSP_RESET
MSP_RESET_NOT
TEMP_1
TEMP_2
SDA_SW
SCL_SW
ICONN_NOT
GRN_LED
RED_LED
RC
RC_IN
LD_ICN
GL_ICN
GREEN_LED
RL_ICN
IR_TX
IR_RX
TO SC3 6 7 9 10 12 13 14
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

3122 123 6001.7

CL 36532051_021.eps
140703

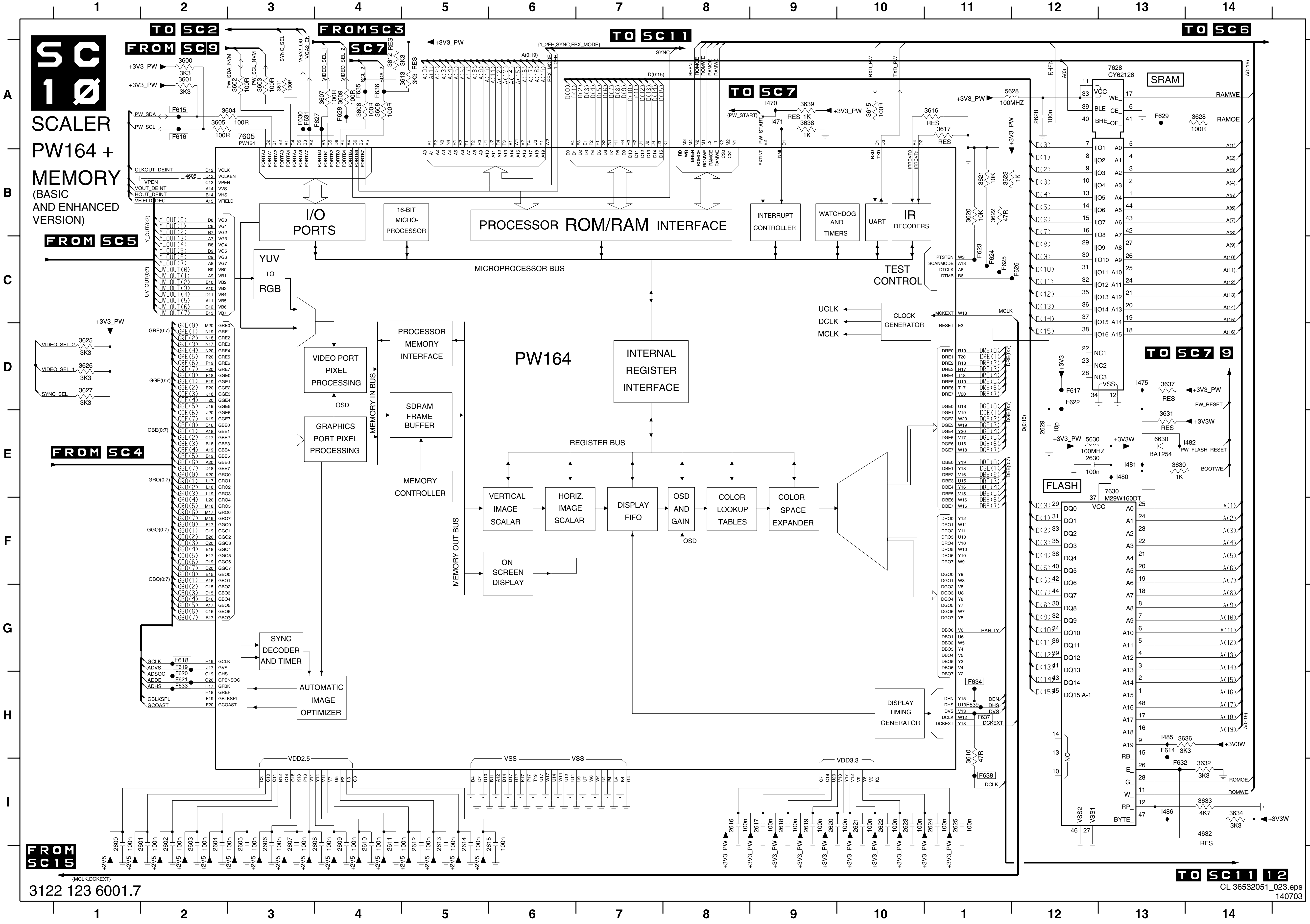
0305	C2
0315	H5
0316	I5
0319	E2
0320	B2
1100	C3
1105	F3
2530	C8
2531	C6
2533	G5
2534	G6
2535	F5
2537	D2
2538	D3
2541	C9
2543	F3
2544	F3
2546	C3
2547	C3
2548	C3
2550	A3
2551	A3
2552	A3
2553	A4
2554	H10
2555	F10
2557	H4
2558	G4
2559	H3
2560	G3
2562	H2
2563	H2
2564	H2
2565	H2
2566	I2
3530	C7
3531	E7
3532	E7
3533	G5
3534	G6
3535	F5
3536	F4
3537	H5
3538	I5
3539	H5
3540	B9
3541	B9
3542	B12
3543	A12
3544	B13
3545	G3
3546	C13
3547	C13
3548	D14
3549	I5
3550	B3
3551	B3
3552	B3
3553	B3
3554	G5
3555	G6
3556	E9
3557	G3
3558	G3
3559	G2
3560	G3
3561	C12
3562	D13
3563	C13
3564	B14
3565	C14
3566	C13
3567	C13
3568	D7
3569	E7
3570	F9
3572	E7
3573	D7
3577	G9
3578	F14
5530	C5
5541	C9
6551	H13
6552	H13
6553	G13
6554	F13
6555	E13
6556	F14
7530	D6
7540	A10
7550-A	I12
7550-B	H10
7555-A	F10
7555-B	E12
7555-C	G12
7563	D14
F527	C12
F528	B12
F529	D2
F530	B2
F531	B2
F532	B2
F533	B2
F534	B2
F535	B2
F536	B2
F537	C2
F538	C2
F539	C2
F540	C3
F541	E2
F542	E2
F543	E2
F544	E2
F545	D2
F546	E2
F547	E2
F548	F2
F549	F2
F550	F2
F551	F2
F552	F2
F553	G2
F554	F2
F555	G2
F556	G2
F557	G2
F558	H5
F559	H5
F560	I5
F561	I5
F562	F2
I400	C2
I401	C6
I402	C7
I403	D7
I404	F14
I405	D5
I406	D6
I407	D5
I408	D14
I409	D13
I410	F10
I411	G9
I412	G9
I413	H9
I414	I12
I415	D8
I416	H12
I417	G12
I418	G12
I419	F12
I420	F12

SCAVIO Panel: Scaler Clock Generator


SC9
SCALER-CLOCK-GENERATOR
(BASIC AND ENHANCED VERSION)
CLOCK GENERATOR
TO SC5
(VIDCLK)
+5V_0E
+5V
5572 100MHZ
I432
2573 10u
2572 100n
+3V3_STBY_SW
5574 100MHZ
2574 100n
VIDCLK 24.576MHz
F566
4572
TO SC10 14
TO SC8 SC14
5570 10u
1570 CX-11F 24M576
I430
I431
I433
2570 1n
7570 FS6377
XIN
XOUT
PD
SCL
SDA
ADDR
SEL_CD
OE
VDD
VSS
REF OSC
PWR DWN CTRL
I2C BUS INTERF
PLL A
PLL B
PLL C
MUX A
MUX B
MUX C
MUX D
7574-A 74LVC125A
7574-B 74LVC125A
7574-C 74LVC125A
7574-D 74LVC125A
4574
VXCA_18M432
F565
F563
MCLK 120MHz
F564
DCKEXT 36MHz
SCL_SW
SDA_SW
3016 100R
3571 100R
TO SC7
+5V_0E
3575 1K
5V
SDA_1
SCL_1
4593 RES
7571-C 74HCT4053D
7571-B 74HCT4053D
7571-A 74HCT4053D
Vdd
Vee
Vss
+5V_STBY_SW
2584 100n
4592 RES
+5V
6500 RES
6501 RES
6502 RES
I435
6503 BZX384-C2V4
I436
3594 4K7
2581 100n
PW-NVM
+3V3_PW
3580 4K7
7580 M24C32
E0
E1
E2
SCL
WC_
VCC
SDA
VSS
3581 100R
3582 100R
3583 4K7
2583 100n
F567
F568
4581
4582 RES
0V4
F569
PW_SCL_NVM
PW_RESET
PW_SDA_NVM
TO SC10
+3V3
1575 F 500mAL 32V 441
+3V3_PW
S86 0386 FTR
DEBUG CONNECTOR PW
4591 RES
F570
F571
F572
F573
F574
F575
F576
F577
F578
F579
F580
F581
F582
F583
F584
F585
F586
F587
F588
F589
F590
F591
F592
F593
F594
F595
F596
F597
F598
3590 3K3
3591 3K3
F599
F600
F601
F602
F603
3592 3K3
F604
3593 3K3
F605
F606
F607
F608
F609
F610
F611
F612
F613
BOOTWE
ROMOE
ROMWE
(ROMWE)
A(0:19)
D(0:15)
3122 123 6001.7
CL 36532051_022.eps 140703

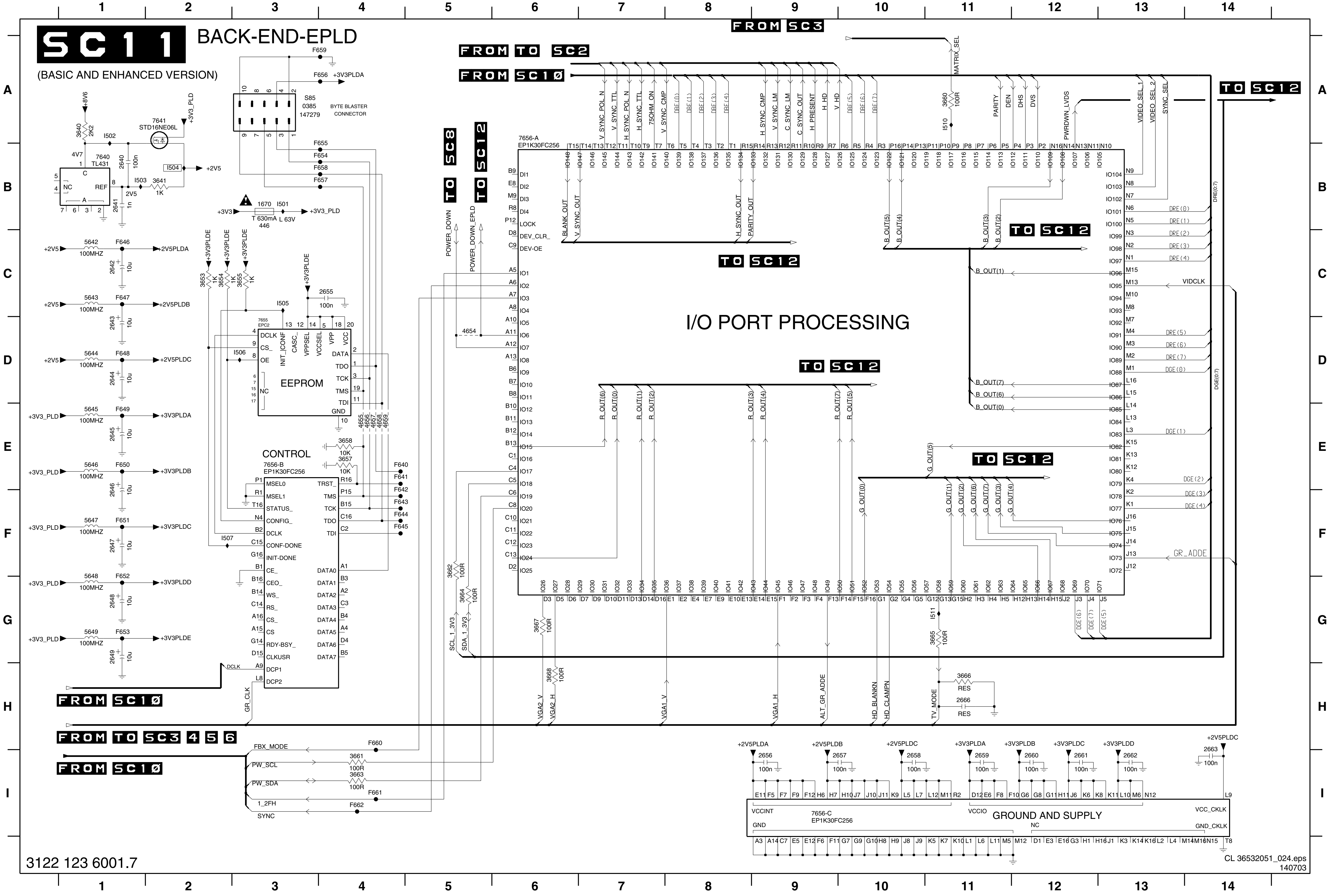
0386	C9
1570	C2
1575	G6
2570	D2
2572	C4
2573	C4
2574	C6
2581	H2
2583	F5
2584	F1
3016	D3
3571	D2
3575	E3
3580	F3
3581	G3
3582	F5
3583	F5
3590	D10
3591	D10
3592	E10
3593	E10
3594	H2
4572	C6
4574	D7
4581	G3
4582	G4
4591	C10
4592	G1
4593	E2
5570	C2
5572	B3
5574	B5
6500	G1
6501	G1
6502	G1
6503	H1
7570	C3
7571-A	G2
7571-B	F2
7571-C	E3
7574-A	C6
7574-B	D6
7574-C	D6
7574-D	E6
7580	F4
F563	E7
F564	E7
F565	D7
F566	B7
F567	G3
F568	G3
F569	G5
F570	C8
F571	C8
F572	C8
F573	C8
F574	C8
F575	D8
F576	D8
F577	D8
F578	D8
F579	D8
F580	D8
F581	E8
F582	E8
F583	E8
F584	E8
F585	F8
F586	F8
F587	F8
F588	F8
F589	F8
F590	F8
F591	C10
F592	C10
F593	C10
F594	C10
F595	C10
F596	D10
F597	D9
F598	D9
F599	D10
F600	D10
F601	D10
F602	D10
F603	E10
F604	E10
F605	E10
F606	E10
F607	E10
F608	E10
F609	F10
F610	F10
F611	F10
F612	F10
F613	F10
I430	C3
I431	D3
I432	B4
I433	D2
I435	H1
I436	H1

SCAVIO Panel: PW164 Scaler and Memory


SC 10
SCALER
PW164 +
MEMORY
(BASIC
AND ENHANCED
VERSION)
TO SC2
FROM SC9
FROM SC3
SC7
TO SC11
TO SC6
TO SC7
FROM SC5
FROM SC4
TO SC7 9
FROM SC15
TO SC11 12
7605
PW164
I/O
PORTS
16-BIT
MICRO-
PROCESSOR
PROCESSOR ROM/RAM INTERFACE
INTERRUPT
CONTROLLER
WATCHDOG
AND
TIMERS
UART
IR
DECODERS
MICROPROCESSOR BUS
TEST
CONTROL
YUV
TO
RGB
CLOCK
GENERATOR
UCLK
DCLK
MCLK
PROCESSOR
MEMORY
INTERFACE
VIDEO PORT
PIXEL
PROCESSING
MEMORY IN BUS
PW164
INTERNAL
REGISTER
INTERFACE
OSD
SDRAM
FRAME
BUFFER
GRAPHICS
PORT PIXEL
PROCESSING
REGISTER BUS
MEMORY
CONTROLLER
VERTICAL
IMAGE
SCALAR
HORIZ.
IMAGE
SCALAR
DISPLAY
FIFO
OSD
AND
GAIN
COLOR
LOOKUP
TABLES
COLOR
SPACE
EXPANDER
MEMORY OUT BUS
ON
SCREEN
DISPLAY
SYNC
DECODER
AND TIMER
AUTOMATIC
IMAGE
OPTIMIZER
DISPLAY
TIMING
GENERATOR
VDD2.5
VSS
VDD3.3
7628
CY62126
SRAM
7630
M29W160DT
FLASH
5628
100MHZ
5630
100MHZ
6630
BAT254
+3V3_PW
+3V3W
+2V5
PW_SDA
PW_SCL
CLKOUT_DEINT
VPEN
VOUT_DEINT
HOUT_DEINT
VFIELD_DEC
GCLK
ADVS
ADSOG
ADDE
ADHS
GBLKSPL
GCOAST
RAMWE
RAMOE
ROMOE
ROMWE
PW_RESET
PW_FLASH_RESET
BOOTWE
DEN
DHS
DVS
DCLK
DCKEXT
PARITY
MCLK
(MCLK,DCKEXT)
3122 123 6001.7
CL 36532051_023.eps
140703

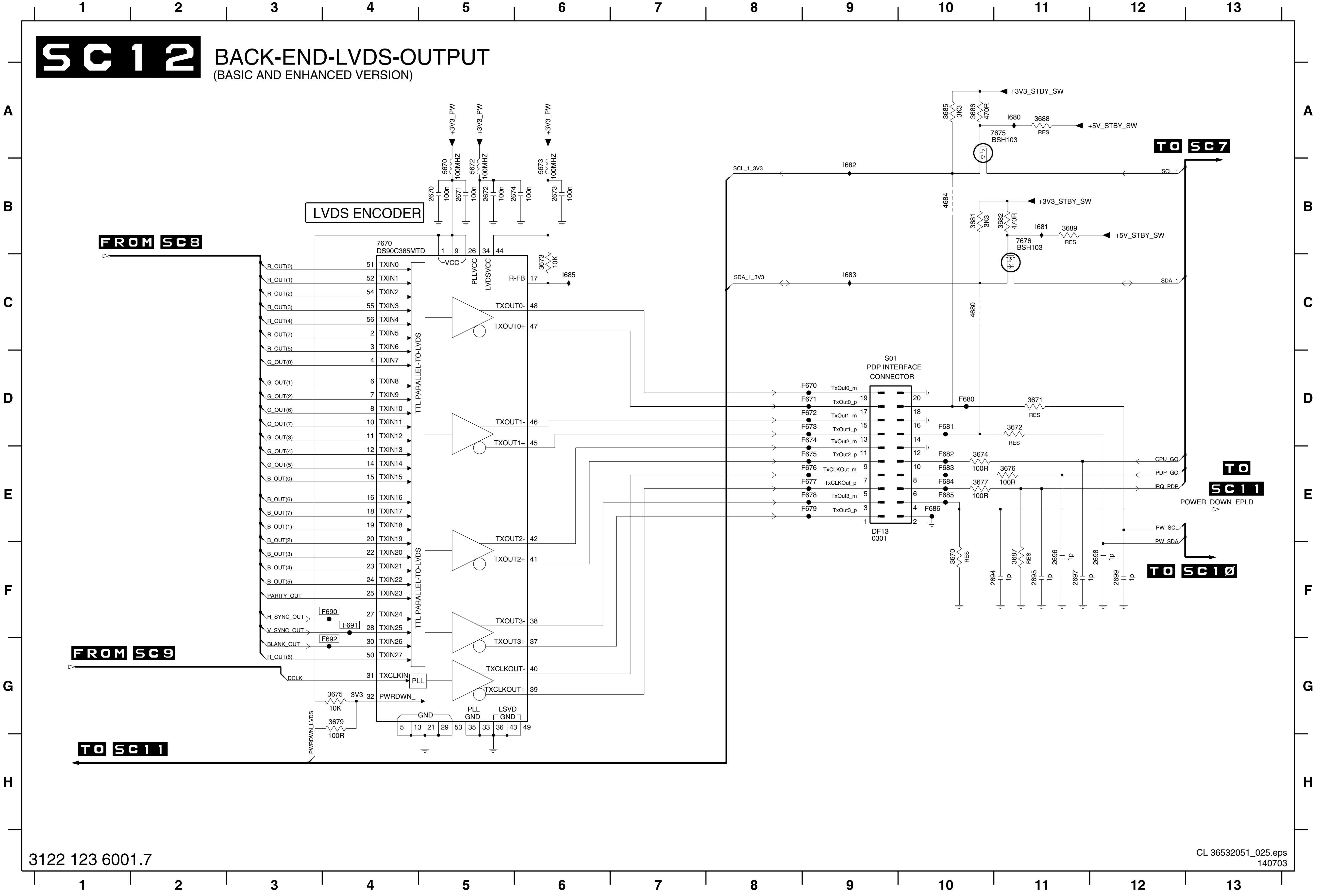
2600	I1
2601	I2
2602	I2
2603	I2
2604	I2
2605	I3
2606	I3
2607	I3
2608	I4
2609	I4
2610	I4
2611	I4
2612	I5
2613	I5
2614	I5
2615	I6
2616	I8
2617	I9
2618	I9
2619	I9
2620	I9
2621	I10
2622	I10
2623	I10
2624	I11
2625	I11
2628	A12
2629	E12
2630	E12
3600	A2
3601	A2
3602	A3
3603	A3
3604	A3
3605	A2
3606	A4
3607	A4
3608	A4
3609	A4
3610	H11
3611	A3
3612	A4
3613	A5
3615	A10
3616	A11
3617	A11
3620	B11
3621	B11
3622	B11
3623	B11
3625	D1
3626	D1
3627	D1
3628	A14
3630	E13
3631	E13
3632	I14
3633	I14
3634	I14
3636	H14
3637	D13
3638	A9
3639	A9
4605	B2
4632	I14
5628	A12
5630	E12
6630	E13
7605	A3
7628	A13
7630	E13
F614	H13
F615	A2
F616	A2
F617	D12
F618	G2
F619	G2
F620	H2
F621	H2
F622	D12
F623	C11
F624	C11
F625	C11
F626	C12
F627	A4
F628	A4
F629	A13
F630	A3
F631	A3
F632	I13
F633	H2
F634	H11
F635	A4
F636	A4
F637	H11
F638	I11
F639	H11
I470	A9
I471	A9
I475	D13
I480	E13
I481	E13
I482	E14
I485	H13
I486	I13

SCAVIO Panel: Back-End EPLD


SC11
BACK-END-EPLD
(BASIC AND ENHANCED VERSION)
FROM SC3
FROM TO SC2
FROM SC10
TO SC12
TO SC8
FROM TO SC3 4 5 6
I/O PORT PROCESSING
7656-A
EP1K30FC256
7656-B
EP1K30FC256
CONTROL
7655
EPC2
EEPROM
7656-C
EP1K30FC256
GROUND AND SUPPLY
VCCINT
VCCIO
VCC_CKLK
GND
GND_CKLK
NC
S85
0385
147279
BYTE BLASTER CONNECTOR
7641
STD16NE06L
7640
TL431
1670
T 630mA L 63V
446
+3V3_PLD
+2V5
+8V6
+3V3
+2V5PLDA
+2V5PLDB
+2V5PLDC
+3V3PLDA
+3V3PLDB
+3V3PLDC
+3V3PLDD
+3V3PLDE
POWER_DOWN
POWER_DOWN_EPLD
MATRIX_SEL
V_SYNC_POL_N
V_SYNC_TTL
H_SYNC_POL_N
H_SYNC_TTL
75OHM_ON
V_SYNC_CMP
H_SYNC_CMP
V_SYNC_LM
C_SYNC_LM
C_SYNC_OUT
H_PRESENT
H_HD
V_HD
PARITY
DEN
DHS
DVS
PWRDWN_LVDS
VIDEO_SEL_1
VIDEO_SEL_2
SYNC_SEL
BLANK_OUT
V_SYNC_OUT
H_SYNC_OUT
PARITY_OUT
VIDCLK
GR_ADDE
GR_CLK
SCL_1_3V3
SDA_1_3V3
VGA2_V
VGA2_H
VGA1_V
VGA1_H
ALT_GR_ADDE
HD_BLANKN
HD_CLAMPN
TV_MODE
FBX_MODE
PW_SCL
PW_SDA
1_2FH
SYNC
DCLK
3122 123 6001.7
CL 36532051_024.eps
140703

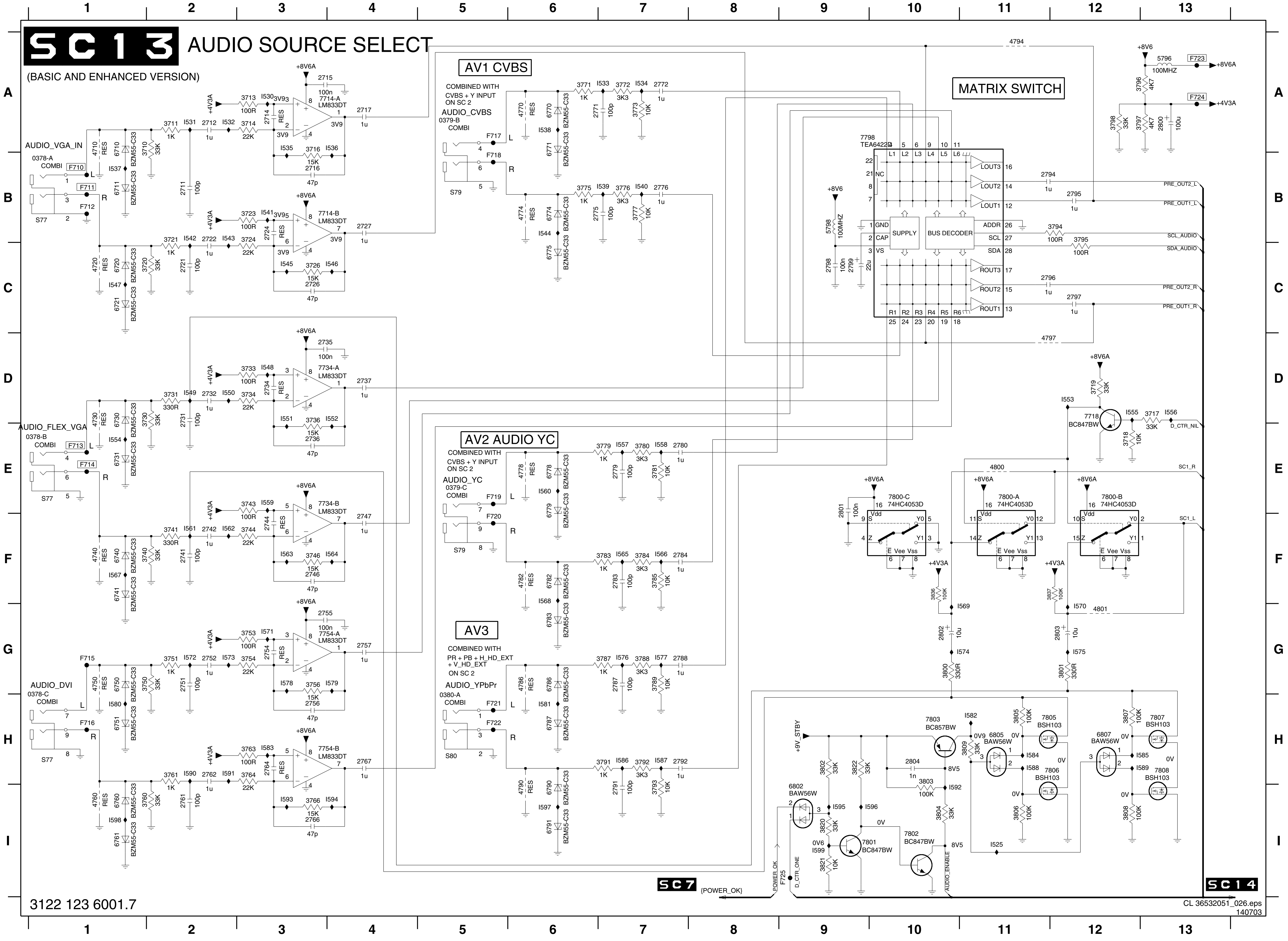
0385	A3
1670	B3
2640	B1
2641	B1
2642	C1
2643	D1
2644	D1
2645	E1
2646	F1
2647	F1
2648	G1
2649	G1
2655	C4
2656	I9
2657	I10
2658	I10
2659	I11
2660	I12
2661	I12
2662	I13
2663	I14
2666	H11
3640	A1
3641	B2
3653	C2
3654	C2
3655	C3
3657	E4
3658	E4
3660	A11
3661	I4
3662	F5
3663	I4
3664	G5
3665	G11
3666	H11
3667	G6
3668	H6
4654	D5
4655	E4
4656	E4
4657	E4
4658	E4
4659	E4
5642	C1
5643	C1
5644	D1
5645	E1
5646	E1
5647	F1
5648	G1
5649	G1
7640	B1
7641	A2
7655	D3
7656-A	A6
7656-B	E3
7656-C	I9
F640	E4
F641	E4
F642	F4
F643	F4
F644	F4
F645	F4
F646	C1
F647	C1
F648	D1
F649	E1
F650	E1
F651	F1
F652	G1
F653	G1
F654	B4
F655	B4
F656	A4
F657	B4
F658	B4
F659	A4
F660	H4
F661	I4
F662	I4
I501	B3
I502	A1
I503	B1
I504	B2
I505	C3
I506	D3
I507	F2
I510	A11
I511	G11

SCAVIO Panel: Back-End LVDS Output


SC12
BACK-END-LVDS-OUTPUT
(BASIC AND ENHANCED VERSION)
LVDS ENCODER
FROM SC8
FROM SC9
TO SC11
TO SC7
TO SC11
TO SC10
7670
DS90C385MTD
VCC
PLLVCC
LVDSVCC
+3V3_PW
5670 100MHZ
5672 100MHZ
5673 100MHZ
2670 100n
2671 100n
2672 100n
2674 100n
2673 100n
3673 10K
R-FB
I685
TTL PARALLEL-TO-LVDS
R_OUT(0)
R_OUT(1)
R_OUT(2)
R_OUT(3)
R_OUT(4)
R_OUT(7)
R_OUT(5)
G_OUT(0)
G_OUT(1)
G_OUT(2)
G_OUT(6)
G_OUT(7)
G_OUT(3)
G_OUT(4)
G_OUT(5)
B_OUT(0)
B_OUT(6)
B_OUT(7)
B_OUT(1)
B_OUT(2)
B_OUT(3)
B_OUT(4)
B_OUT(5)
PARITY_OUT
H_SYNC_OUT
V_SYNC_OUT
BLANK_OUT
R_OUT(6)
DCLK
F690
F691
F692
TXIN0 … TXIN27
TXCLKIN
PLL
PWRDWN_
3675 10K
3V3
3679 100R
PWRDWN_LVDS
TXOUT0- 48
TXOUT0+ 47
TXOUT1- 46
TXOUT1+ 45
TXOUT2- 42
TXOUT2+ 41
TXOUT3- 38
TXOUT3+ 37
TXCLKOUT- 40
TXCLKOUT+ 39
GND
PLL GND
LSVD GND
SCL_1_3V3
SDA_1_3V3
I682
I683
SCL_1
SDA_1
+3V3_STBY_SW
+5V_STBY_SW
3685 3K3
3686 470R
I680
3688 RES
7675 BSH103
4684
3681 3K3
3682 470R
I681
3689 RES
7676 BSH103
4680
S01
PDP INTERFACE
CONNECTOR
DF13
0301
F670 TxOut0_m
F671 TxOut0_p
F672 TxOut1_m
F673 TxOut1_p
F674 TxOut2_m
F675 TxOut2_p
F676 TxCLKOut_m
F677 TxCLKOut_p
F678 TxOut3_m
F679 TxOut3_p
F680
3671 RES
F681
3672 RES
F682
3674 100R
F683
3676 100R
F684
3677 100R
F685
F686
CPU_GO
PDP_GO
IRQ_PDP
POWER_DOWN_EPLD
PW_SCL
PW_SDA
3670 RES
3687 RES
2694 1p
2695 1p
2696 1p
2697 1p
2698 1p
2699 1p
3122 123 6001.7
CL 36532051_025.eps
140703

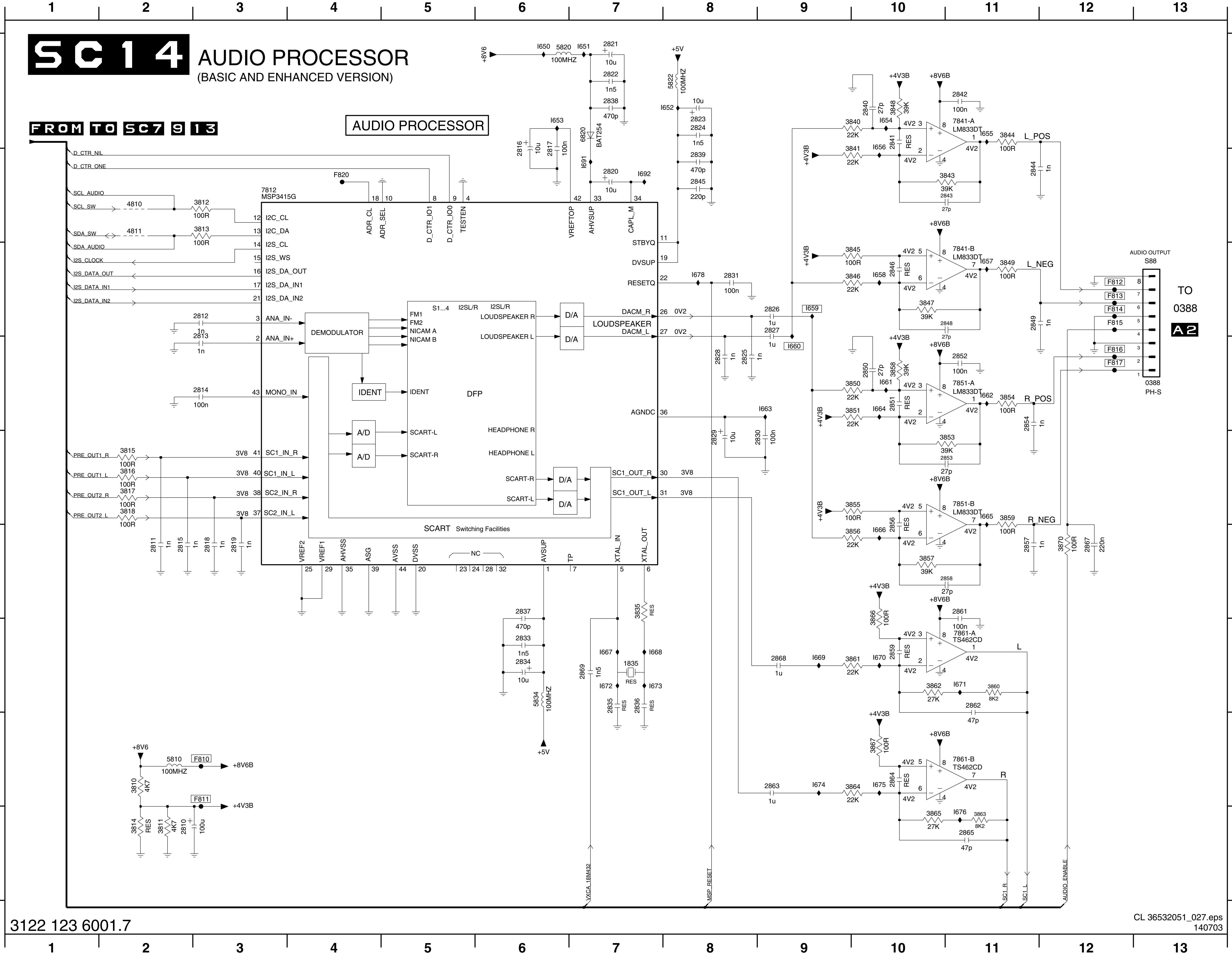
0301	E9
2670	B5
2671	B5
2672	B5
2673	B6
2674	B6
2694	F11
2695	F11
2696	F11
2697	F11
2698	F12
2699	F12
3670	F10
3671	D11
3672	D11
3673	C6
3674	E10
3675	G4
3676	E11
3677	E10
3679	G4
3681	B10
3682	B11
3685	A10
3686	A10
3687	F11
3688	A11
3689	B11
4680	C10
4684	B10
5670	B5
5672	B5
5673	B6
7670	B4
7675	A11
7676	B11
F670	D9
F671	D9
F672	D9
F673	D9
F674	D9
F675	E9
F676	E9
F677	E9
F678	E9
F679	E9
F680	D10
F681	D10
F682	E10
F683	E10
F684	E10
F685	E10
F686	E10
F690	F4
F691	F4
F692	G4
I680	A11
I681	B11
I682	B9
I683	C9
I685	C6

SCAVIO Panel: Audio Source Select


SC13
AUDIO SOURCE SELECT
(BASIC AND ENHANCED VERSION)
AV1 CVBS
COMBINED WITH CVBS + Y INPUT ON SC 2
AUDIO_CVBS
MATRIX SWITCH
7798 TEA6422D
SUPPLY
BUS DECODER
AUDIO_VGA_IN
AUDIO_FLEX_VGA
AUDIO_DVI
AV2 AUDIO YC
COMBINED WITH CVBS + Y INPUT ON SC 2
AUDIO_YC
AV3
COMBINED WITH PR + PB + H_HD_EXT + V_HD_EXT ON SC 2
AUDIO_YPbPr
PRE_OUT2_L
PRE_OUT1_L
SCL_AUDIO
SDA_AUDIO
PRE_OUT2_R
PRE_OUT1_R
D_CTR_NIL
SC1_R
SC1_L
7800-A 74HC4053D
7800-B 74HC4053D
7800-C 74HC4053D
+9V_STBY
POWER_OK
D_CTR_ONE
AUDIO_ENABLE
SC7
(POWER_OK)
SC14
3122 123 6001.7
CL 36532051_026.eps
140703

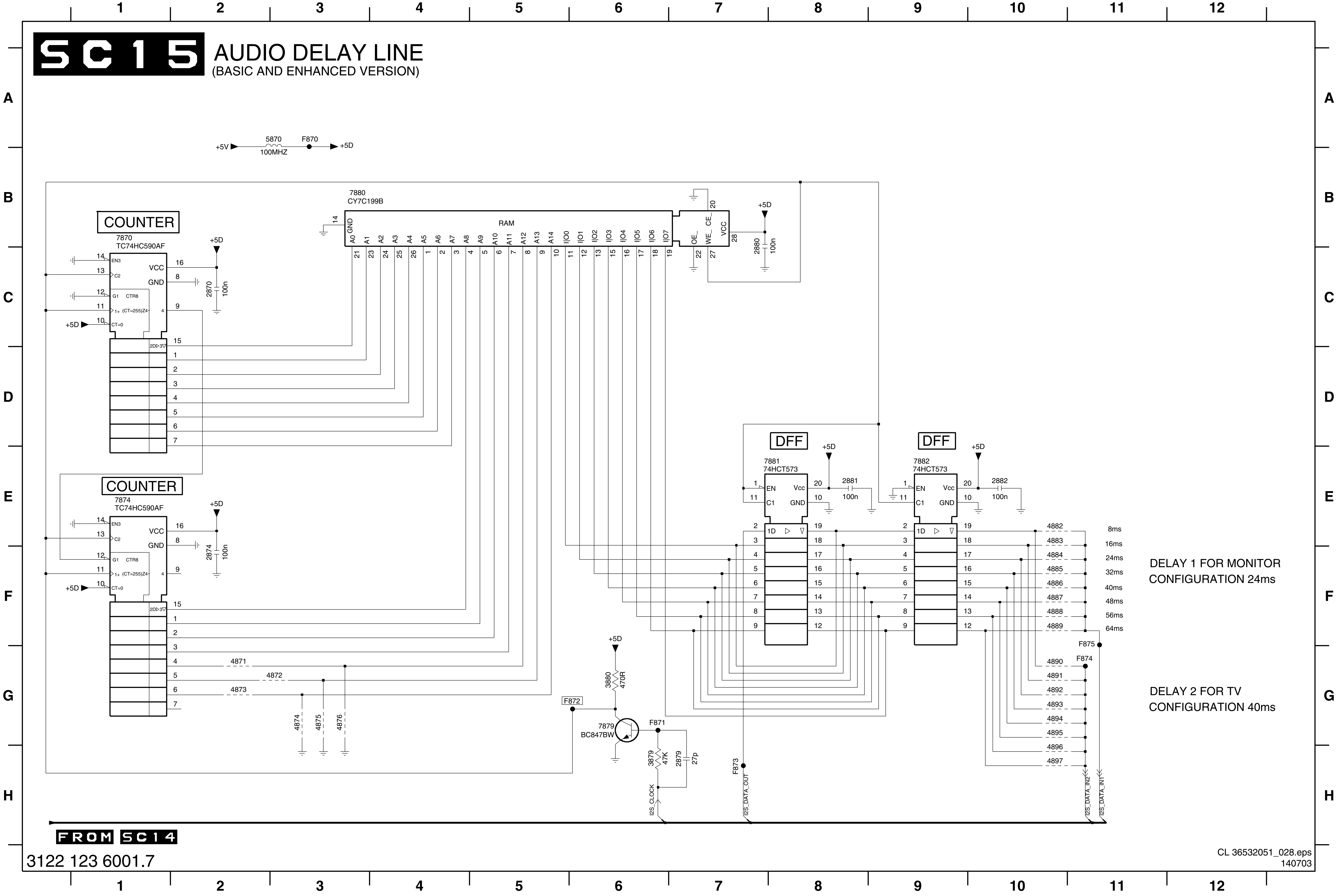
0378-A	B1
0378-B	E1
0378-C	G1
0379-B	A5
0379-C	E5
0380-A	G5
2711	B2
2712	A2
2714	A3
2715	A3
2716	B3
2717	A4
2721	C2
2722	B2
2724	B3
2726	C3
2727	B4
2731	D2
2732	D2
2734	D3
2735	D3
2736	E3
2737	D4
2741	F2
2742	F2
2744	F3
2746	F3
2747	F4
2751	G2
2752	G2
2754	G3
2755	G3
2756	H3
2757	G4
2761	I2
2762	H2
2764	H3
2766	I3
2767	H4
2771	A6
2772	A7
2775	B6
2776	B7
2779	E7
2780	E7
2783	F7
2784	F7
2787	G7
2788	G7
2791	I7
2792	H7
2794	B11
2795	B12
2796	C11
2797	C12
2798	C9
2799	C9
2800	A13
2801	E9
2802	G10
2803	G12
2804	H10
3710	A2
3711	A2
3713	A3
3714	A3
3716	A3
3717	D13
3718	E12
3719	D12
3720	C2
3721	B2
3723	B3
3724	B3
3726	C3
3730	D2
3731	D2
3733	D3
3734	D3
3736	D3
3740	F2
3741	F2
3743	E3
3744	F3
3746	F3
3750	G2
3751	G2
3753	G3
3754	G3
3756	G3
3760	I2
3761	H2
3763	H3
3764	H3
3766	I3
3771	A6
3772	A7
3773	A7
3775	B6
3776	B7
3777	B7
3779	E7
3780	E7
3781	E7
3783	F7
3784	F7
3785	F7
3787	G7
3788	G7
3789	G7
3791	H7
3792	H7
3793	I7
3794	B12
3795	B12
3796	A13
3797	A13
3798	A12
3800	G10
3801	G12
3802	H9
3803	H10
3804	I10
3805	H11
3806	I11
3807	H12
3808	I12
3809	H11
3820	I9
3821	I9
3822	H9
3836	F10
3837	F12
4710	A1
4720	C1
4730	D1
4740	F1
4750	G1
4760	I1
4770	A6
4774	B6
4778	E6
4782	F6
4786	G6
4790	I6
4794	A11
4797	D11
4800	E11
4801	G12
5796	A13
5798	B9
6710	A1
6711	B1
6720	C1
6721	C1
6730	D1
6731	E1
6740	F1
6741	F1
6750	G1
6751	H1
6760	I1
6761	I1
6770	A6
6771	A6
6774	B6
6775	C6
6778	E6
6779	E6
6782	F6
6783	G6
6786	G6
6787	H6
6790	I6
6791	I6
6802	I9
6805	H11
6807	H12
7714-A	A3
7714-B	B3
7718	D12
7734-A	D3
7734-B	E3
7754-A	G3
7754-B	H3
7798	A9
7800-A	E11
7800-B	E12
7800-C	E10
7801	I9
7802	I10
7803	H10
7805	H11
7806	H12
7807	H13
7808	H13
F710	B1
F711	B1
F712	B1
F713	E1
F714	E1
F715	G1
F716	H1
F717	A5
F718	B5
F719	E5
F720	F5
F721	H5
F722	H5
F723	A13
F724	A13
F725	I9
I525	I11
I530	A3
I531	A2
I532	A2
I533	A7
I534	A7
I535	A3
I536	A4
I537	B1
I538	A6
I539	B7
I540	B7
I541	B3
I542	B2
I543	B2
I544	B6
I545	C3
I546	C4
I547	C1
I548	D3
I549	D2
I550	D2
I551	D3
I552	D4
I553	D12
I554	E1
I555	D12
I556	D13
I557	E7
I558	E7
I559	E3
I560	E6
I561	F2
I562	F2
I563	F3
I564	F4
I565	F7
I566	F7
I567	F1
I568	F6
I569	G11
I570	G12
I571	G3
I572	G2
I573	G2
I574	G11
I575	G12
I576	G7
I577	G7
I578	G3
I579	G4
I580	H1
I581	H6
I582	H11
I583	H3
I584	H11
I585	H13
I586	H7
I587	H7
I588	H11
I589	H13
I590	H2
I591	H2
I592	I10
I593	I3
I594	I4
I595	I9
I596	I10
I597	I6
I598	I1
I599	I9

SCAVIO Panel: Audio Processor


SC14
AUDIO PROCESSOR
(BASIC AND ENHANCED VERSION)
FROM TO SC7 9 13
AUDIO PROCESSOR
D_CTR_NIL
D_CTR_ONE
SCL_AUDIO
SCL_SW
SDA_SW
SDA_AUDIO
I2S_CLOCK
I2S_DATA_OUT
I2S_DATA_IN1
I2S_DATA_IN2
PRE_OUT1_R
PRE_OUT1_L
PRE_OUT2_R
PRE_OUT2_L
7812
MSP3415G
I2C_CL
I2C_DA
I2S_CL
I2S_WS
I2S_DA_OUT
I2S_DA_IN1
I2S_DA_IN2
ANA_IN-
ANA_IN+
MONO_IN
SC1_IN_R
SC1_IN_L
SC2_IN_R
SC2_IN_L
DEMODULATOR
IDENT
A/D
DFP
FM1
FM2
NICAM A
NICAM B
S1...4
I2SL/R
LOUDSPEAKER R
LOUDSPEAKER L
HEADPHONE R
HEADPHONE L
SCART-L
SCART-R
D/A
LOUDSPEAKER
DACM_R
DACM_L
SC1_OUT_R
SC1_OUT_L
STBYQ
DVSUP
RESETQ
AGNDC
SCART Switching Facilities
ADR_CL
ADR_SEL
D_CTR_IO1
D_CTR_IO0
TESTEN
VREFTOP
AHVSUP
CAPL_M
VREF2
VREF1
AHVSS
ASG
AVSS
DVSS
NC
AVSUP
TP
XTAL_IN
XTAL_OUT
+8V6
+5V
5820 100MHZ
5822 100MHZ
5834 100MHZ
5810 100MHZ
6820 BAT254
1835
F810
F811
+8V6B
+4V3B
7841-A LM833DT
7841-B LM833DT
7851-A LM833DT
7851-B LM833DT
7861-A TS462CD
7861-B TS462CD
L_POS
L_NEG
R_POS
R_NEG
L
R
AUDIO OUTPUT
S88
F812
F813
F814
F815
F816
F817
0388
PH-S
TO
0388
A2
VXCA_18M432
MSP_RESET
SC1_R
SC1_L
AUDIO_ENABLE
3122 123 6001.7
CL 36532051_027.eps
140703

0388	D13
1835	G7
2810	I2
2811	F2
2812	C3
2813	D3
2814	D3
2815	F2
2816	B6
2817	B6
2818	F3
2819	F3
2820	B7
2821	A7
2822	A7
2823	A8
2824	A8
2825	D8
2826	C9
2827	C9
2828	D8
2829	E8
2830	E9
2831	C8
2833	G6
2834	G6
2835	G7
2836	G7
2837	F6
2838	A7
2839	B8
2840	A10
2841	A10
2842	A11
2843	B11
2844	B11
2845	B8
2846	C10
2848	C11
2849	C11
2850	D10
2851	D10
2852	D11
2853	E11
2854	D11
2856	F10
2857	F11
2858	F11
2859	G10
2861	F11
2862	G11
2863	H9
2864	H10
2865	I11
2867	F12
2868	G9
2869	G7
3810	H2
3811	I2
3812	B3
3813	B3
3814	I2
3815	E2
3816	E2
3817	E2
3818	E2
3835	F7
3840	A10
3841	B10
3843	B11
3844	A11
3845	C10
3846	C10
3847	C10
3848	A10
3849	C11
3850	D10
3851	D10
3853	E11
3854	D11
3855	E10
3856	F10
3857	F10
3858	D10
3859	E11
3860	G11
3861	G10
3862	G10
3863	I11
3864	H10
3865	I10
3866	F10
3867	H10
3870	F12
4810	B2
4811	B2
5810	H2
5820	A6
5822	A8
5834	G6
6820	A7
7812	B3
7841-A	A11
7841-B	C11
7851-A	D11
7851-B	E11
7861-A	G11
7861-B	H11
F810	H3
F811	H3
F812	C12
F813	C12
F814	C12
F815	C12
F816	D12
F817	D12
F820	B4
I650	A6
I651	A7
I652	A8
I653	A6
I654	A10
I655	A11
I656	A10
I657	C11
I658	C10
I659	C9
I660	D9
I661	D10
I662	D11
I663	D9
I664	D10
I665	E11
I666	F10
I667	G7
I668	G7
I669	G9
I670	G10
I671	G11
I672	G7
I673	G7
I674	H9
I675	H10
I676	I11
I678	C8
I691	B7
I692	B7

SCAVIO Panel: Audio Delay Line


SC15
AUDIO DELAY LINE
(BASIC AND ENHANCED VERSION)
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H
+5V
5870
100MHZ
F870
+5D
COUNTER
7870
TC74HC590AF
EN3
C2
G1 CTR8
1+ (CT=255)Z4
CT=0
2D▷3∇
VCC
GND
2870
100n
COUNTER
7874
TC74HC590AF
2874
100n
4871
4872
4873
4874
4875
4876
7880
CY7C199B
RAM
GND
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14
IO0 IO1 IO2 IO3 IO4 IO5 IO6 IO7
OE_ WE_ CE_ VCC
2880
100n
DFF
7881
74HCT573
EN
C1
Vcc
GND
1D
2881
100n
DFF
7882
74HCT573
2882
100n
4882 4883 4884 4885 4886 4887 4888 4889
8ms
16ms
24ms
32ms
40ms
48ms
56ms
64ms
DELAY 1 FOR MONITOR
CONFIGURATION 24ms
F875
F874
4890 4891 4892 4893 4894 4895 4896 4897
DELAY 2 FOR TV
CONFIGURATION 40ms
F872
3880
470R
7879
BC847BW
F871
3879
47K
2879
27p
F873
I2S_CLOCK
I2S_DATA_OUT
I2S_DATA_IN2
I2S_DATA_IN1
FROM SC14
3122 123 6001.7
CL 36532051_028.eps
140703

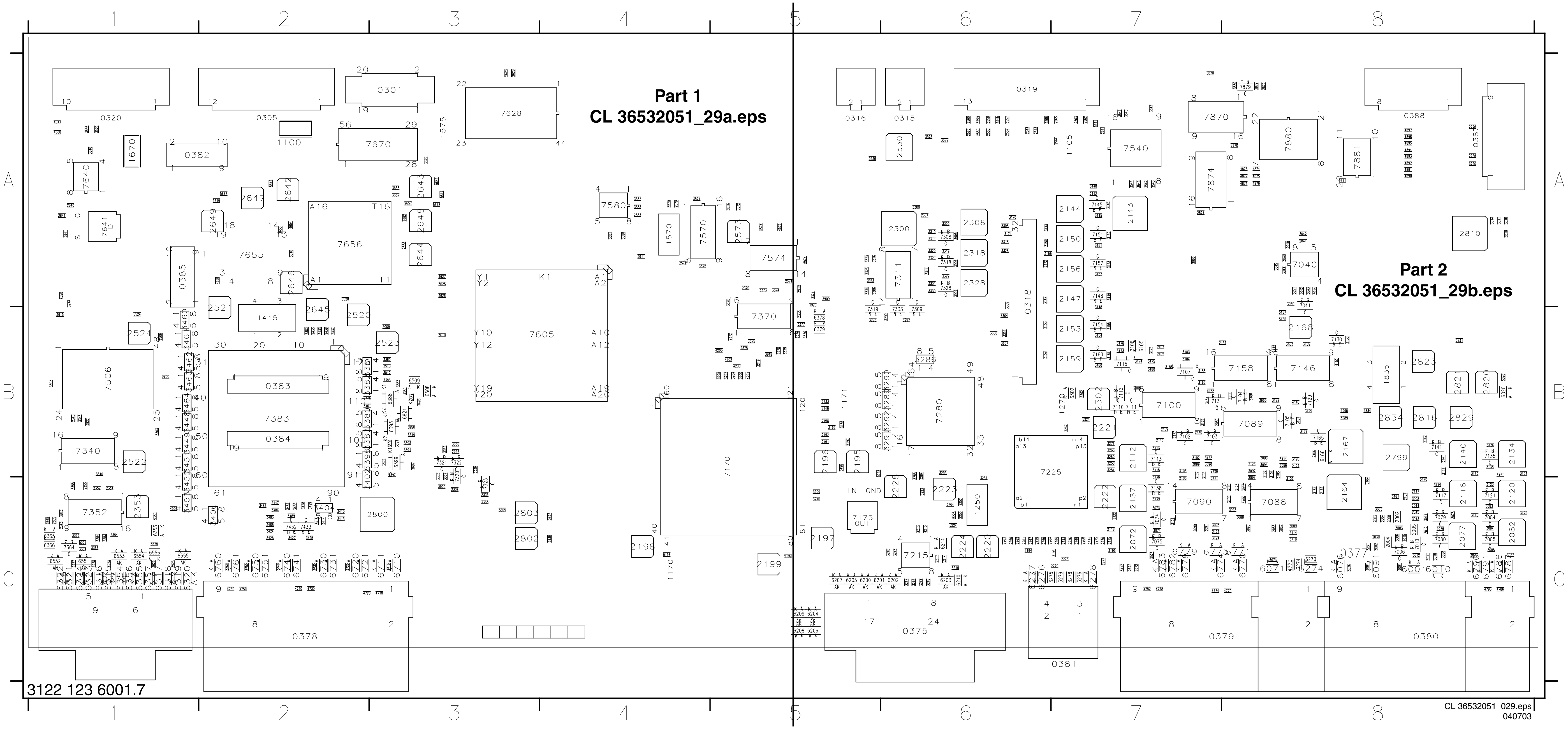
2870	C2
2874	F2
2879	H7
2880	B7
2881	E8
2882	E10
3879	H6
3880	G6
4871	G2
4872	G3
4873	G2
4874	G3
4875	G3
4876	G3
4882	E10
4883	E10
4884	F10
4885	F10
4886	F10
4887	F10
4888	F10
4889	F10
4890	G10
4891	G10
4892	G10
4893	G10
4894	G10
4895	G10
4896	G10
4897	H10
5870	A3
7870	B1
7874	E1
7879	G6
7880	B3
7881	E7
7882	E9
F870	A3
F871	G6
F872	G6
F873	H7
F874	G11
F875	F11

Layout SCAVIO Panel (Overview Top Side)

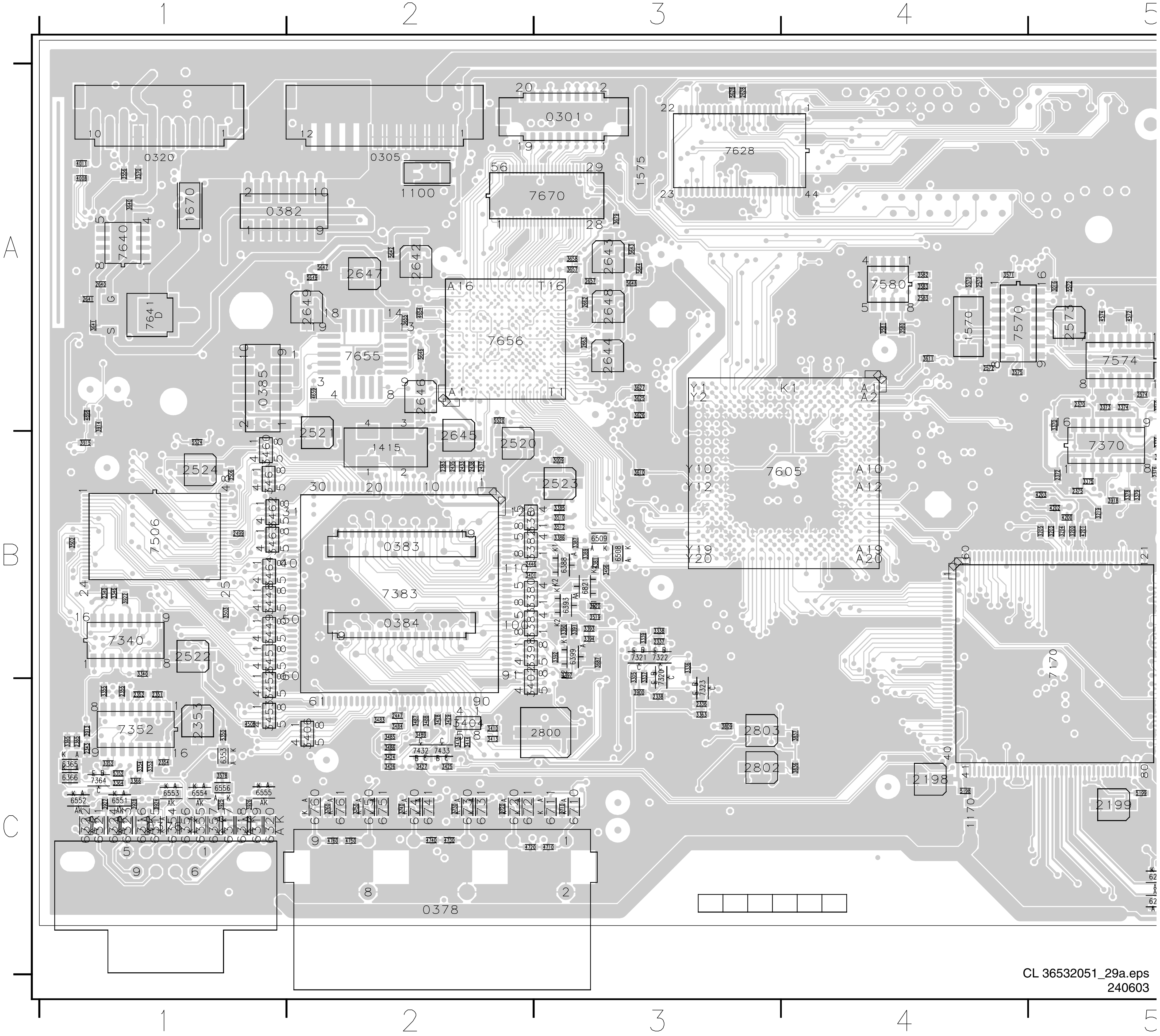
0301	A3	1575	A3	2107	B7	2150	A7	2228	C6	2328	A6	2522	B1	2645	B2	3004	C8	3078	C8
0305	A2	1670	A1	2108	B7	2151	B5	2252	C6	2335	B5	2523	B3	2646	A2	3005	C8	3079	C8
0315	A6	1835	B8	2109	B7	2152	B5	2253	C6	2336	C3	2524	B1	2647	A2	3006	C8	3080	C8
0316	A5	2002	C8	2110	B7	2153	B7	2254	C6	2337	B3	2530	A6	2648	A3	3008	C8	3081	C8
0318	A6	2003	C8	2111	B8	2156	A7	2260	C6	2338	C3	2541	A7	2649	A2	3009	B3	3082	C8
0319	A6	2004	C8	2112	B7	2157	B8	2261	C6	2340	B1	2543	A6	2657	A3	3010	C8	3083	C8
0320	A1	2005	C8	2113	B7	2158	B5	2262	C6	2343	C1	2544	A6	2662	A3	3011	C8	3084	C8
0375	C6	2008	C8	2114	C8	2159	B7	2263	C6	2351	C1	2557	A6	2663	A3	3012	C8	3085	C8
0376	C1	2012	C8	2115	C7	2161	C8	2264	C6	2352	C1	2558	A6	2799	B8	3013	C8	3086	B8
0378	C2	2014	C8	2116	C8	2164	C8	2265	C7	2353	C1	2559	A6	2800	C3	3014	C8	3087	C8
0379	C7	2015	C8	2117	C8	2165	C8	2266	C6	2354	C1	2560	A6	2802	C3	3015	C8	3088	C8
0380	C8	2021	C8	2118	C7	2166	B8	2267	C6	2355	C1	2562	A7	2803	C3	3016	A5	3089	C8
0381	C7	2030	C8	2119	C6	2167	B8	2268	C7	2365	C1	2563	A7	2810	A8	3040	A8	3090	B7
0382	A1	2040	A8	2120	C8	2168	B8	2269	C7	2370	A5	2564	A7	2816	B8	3041	A8	3091	C7
0383	B2	2041	A8	2123	C7	2195	B5	2270	C7	2372	B5	2565	A7	2820	B8	3042	A8	3092	C8
0384	B2	2042	A8	2124	C7	2196	B5	2274	C7	2375	B5	2566	A6	2821	B8	3043	A8	3093	C7
0385	A1	2060	A7	2127	B8	2197	C5	2275	C7	2376	B5	2570	A4	2823	B8	3044	A8	3094	B8
0387	A8	2072	C7	2128	B7	2198	C4	2276	C7	2383	B2	2572	A4	2829	B8	3045	A8	3095	C8
0388	A8	2077	C8	2134	B8	2199	C5	2277	C7	2433	B2	2573	A5	2831	B8	3050	A8	3096	C8
1100	A2	2082	C8	2137	C7	2217	C6	2278	C7	2435	B2	2574	A5	2834	B8	3051	A8	3097	B8
1105	A7	2088	C8	2140	B8	2220	C6	2279	C7	2437	B2	2583	A4	2870	A8	3071	C8	3098	B8
1170	C4	2089	B7	2142	A7	2221	B7	2300	A6	2438	B2	2628	A3	2874	A7	3072	C7	3099	B7
1171	B5	2090	C7	2143	A7	2222	C7	2301	A6	2446	B2	2640	A1	2879	A8	3073	C7	3100	C8
1250	C6	2097	C8	2144	A7	2223	C6	2302	B7	2447	C2	2641	A1	2881	A8	3074	C7	3101	C7
1270	B7	2103	C7	2145	B8	2224	C6	2308	A6	2499	B1	2642	A2	3001	C8	3075	C7	3102	B7
1415	B2	2105	B7	2146	B5	2225	A8	2311	A6	2520	B2	2643	A3	3002	C8	3076	C8	3103	B7
1570	A4	2106	B7	2147	A7	2226	A8	2318	A6	2521	B2	2644	A3	3003	C8	3077	C8	3104	B8

3105	B8	3133	B5	3161	B7	3200	B5	3284	B6	3330	A6	3378	B5	3426	C2	3519	B3	3611	A4
3106	C8	3134	B8	3162	B5	3203	B5	3285	B6	3331	A6	3379	B5	3427	C2	3520	B3	3625	A3
3107	C8	3135	B8	3163	B8	3204	B5	3286	B6	3333	A5	3380	B2	3428	C2	3536	A5	3626	A3
3108	B7	3136	B8	3164	C8	3205	B5	3289	B6	3334	A5	3381	B2	3429	C2	3540	A7	3627	A3
3109	B7	3137	C7	3165	B7	3209	C5	3290	B6	3336	B3	3382	B2	3448	B1	3541	A7	3640	A1
3110	C8	3138	C7	3166	B5	3210	C5	3291	B6	3337	B3	3383	B2	3449	B1	3542	A7	3641	A1
3111	C7	3139	C7	3170	A6	3213	C6	3292	B6	3338	B3	3385	B3	3451	B1	3543	A7	3655	A2
3112	C7	3140	B8	3171	A6	3214	C6	3293	B6	3339	B3	3386	B3	3452	C1	3544	A7	3657	A3
3113	B7	3141	B8	3172	A6	3215	C6	3297	B6	3340	B1	3387	B3	3453	C1	3545	A6	3658	A3
3114	B8	3142	B8	3173	B7	3216	C6	3298	B5	3346	B1	3389	B3	3460	B1	3546	A7	3660	B8
3115	B7	3144	A6	3174	B7	3217	C6	3299	B6	3351	B6	3390	B3	3461	B1	3547	A7	3667	B6
3116	C8	3145	A7	3175	B7	3218	C6	3304	B6	3352	C1	3391	B3	3462	B1	3556	A1	3668	B6
3117	B8	3146	A7	3176	B7	3219	B5	3305	B3	3353	C1	3392	B3	3463	B1	3557	A6	3679	A3
3118	C8	3147	A6	3177	B7	3220	A8	3306	A5	3354	C1	3393	B3	3464	B1	3558	A6	3687	B3
3119	C8	3148	B7	3178	B8	3250	B7	3308	A6	3355	C1	3394	B3	3483	C2	3559	A6	3710	C3
3120	C8	3149	A7	3179	B7	3251	B7	3309	A6	3359	A6	3397	B3	3484	C2	3560	A6	3720	C2
3121	B8	3150	A6	3180	B8	3260	B7	3310	A6	3363	C3	3398	B2	3485	C2	3570	A1	3730	C2
3122	B7	3151	A7	3181	B8	3261	C6	3311	A6	3364	C1	3401	B2	3486	C2	3571	A4	3740	C2
3123	C8	3152	A7	3182	B8	3262	B7	3316	A5	3365	C1	3402	C2	3487	C2	3572	A6	3750	C2
3124	C7	3153	B6	3183	B7	3263	B7	3318	A6	3366	C1	3404	C2	3488	C2	3573	A6	3760	C2
3125	C8	3154	B7	3184	B7	3271	B7	3319	A6	3370	A5	3406	C2	3489	C2	3575	A4	3809	C3
3126	B8	3155	B7	3186	B7	3274	C8	3320	A6	3371	A5	3410	C2	3496	B3	3578	C1	3810	A8
3127	B8	3156	A6	3188	B7	3275	C6	3321	A6	3373	A5	3413	C2	3502	B1	3580	A4	3811	A8
3128	B8	3157	A7	3189	B8	3276	C7	3323	A5	3374	A5	3414	C2	3503	B1	3581	A4	3814	A8
3129	B8	3158	A7	3193	C7	3277	C8	3324	A5	3375	B5	3415	C2	3506	B1	3582	A4	3836	C4
3130	B8	3159	B6	3194	C6	3278	C7	3328	A6	3376	B5	3424	C2	3510	B3	3583	A4	3837	C4
3131	B7	3160	B7	3195	C7	3279	C7	3329	A6	3377	B5	3425	C2	3512	B3	3610	B3	3879	A8

3880	A8	4215	C6	4890	A8	5223	C6	6010	C8	6319	C1	6711	C3	7040	A8	7135	B8	7333	B6
3900	C3	4216	C6	4891	A8	5224	C6	6071	C8	6320	C1	6720	C2	7041	A8	7138	C7	7340	B1
3905	A6	4220	C8	4892	A8	5226	C6	6076	C8	6321	C1	6721	C2	7074	C7	7141	B8	7352	C1
3906	A6	4381	B3	4893	A8	5228	B5	6091	C8	6322	C1	6730	C2	7075	C7	7145	A7	7364	C1
3907	A6	4500	C1	4894	A8	5300	A6	6105	B7	6323	C1	6731	C2	7079	C8	7146	B8	7370	B5
3909	A5	4572	A5	4895	A8	5302	B7	6166	B8	6324	C1	6740	C2	7080	C8	7148	A7	7383	B2
3913	C1	4574	A5	4896	A8	5350	C1	6200	C5	6353	C1	6741	C2	7084	C8	7151	A7	7432	C2
3914	A1	4654	A2	4897	A8	5352	C1	6201	C5	6354	C1	6750	C2	7085	C8	7154	B7	7433	C2
3915	B1	4659	A2	4898	A1	5520	A2	6202	C6	6355	C1	6751	C2	7088	C8	7157	A7	7506	B1
3918	B5	4710	C3	5089	B8	5524	B1	6203	C6	6356	C1	6760	C2	7089	B8	7158	B8	7540	A7
3919	A5	4720	C2	5090	B8	5541	A7	6204	C5	6357	C1	6761	C2	7090	C7	7160	B7	7570	A4
3920	A5	4730	C2	5140	A7	5570	A4	6205	C5	6365	C1	6770	C8	7100	B7	7165	B8	7574	A5
3922	B1	4740	C2	5161	C8	5572	A5	6206	C5	6366	C1	6771	C8	7102	B7	7170	B5	7580	A4
3924	C1	4750	C2	5164	C8	5574	A5	6207	C5	6378	B5	6774	C7	7103	B7	7175	C5	7605	B4
3925	C1	4760	C2	5166	B8	5628	A3	6208	C5	6379	B5	6775	C7	7104	B8	7215	C6	7628	A3
3926	C1	4770	C8	5167	B8	5642	A2	6209	C5	6388	B3	6778	C7	7105	B8	7225	B6	7640	A1
3927	C1	4774	C7	5170	C8	5643	A3	6210	C6	6393	B3	6779	C7	7107	B7	7280	B6	7641	A1
3928	C1	4778	C7	5175	B7	5644	A3	6214	C6	6399	B3	6782	C7	7110	B7	7308	A6	7655	A2
4008	A1	4782	C7	5180	B7	5646	A2	6274	C8	6508	B3	6783	C7	7111	B7	7309	B6	7656	A2
4011	A1	4786	C8	5196	B5	5647	A2	6276	C6	6509	B3	6786	C8	7112	B7	7311	A6	7670	A3
4146	B8	4790	C8	5197	B5	5648	A3	6277	C6	6551	C1	6787	C8	7113	B7	7318	A6	7870	A7
4152	B8	4871	A8	5198	C4	5649	A2	6278	C7	6552	C1	6790	C8	7115	B7	7319	B5	7874	A7
4158	B7	4872	A8	5199	C5	5810	A8	6302	B7	6553	C1	6791	C8	7117	C8	7320	B3	7879	A8
4200	B5	4873	A8	5210	C6	5820	B8	6315	C1	6554	C1	6820	B8	7121	C8	7321	B3	7880	A8
4201	B5	4874	A8	5214	C6	5834	B8	6316	C1	6555	C1	6821	B3	7129	B8	7322	B3	7881	A8
4202	B5	4875	A8	5221	B7	5870	A7	6317	C1	6556	C1	7006	C8	7130	B8	7323	C3		
4203	B5	4876	A8	5222	C7	6001	C8	6318	C1	6710	C3	7010	C8	7131	B7	7328	A6		

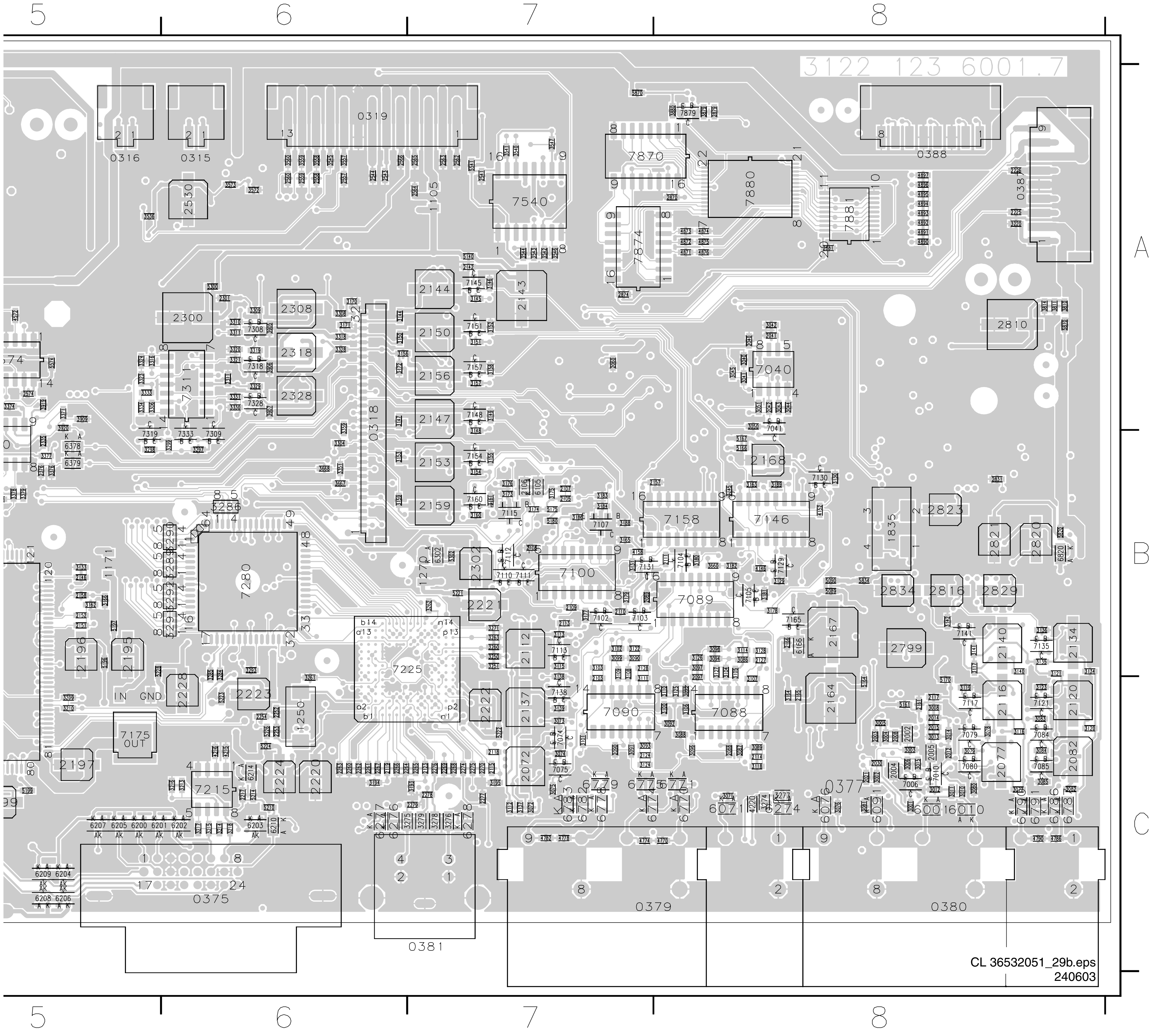


Layout SCAVIO Panel (Part 1 Top Side)


1
2
3
4
5
A
B
C
0320
0305
0301
7628
1100
7670
1575
0382
1670
7640
7641
2647
2642
2643
2649
7655
7656
2648
2644
7580
1570
7570
2573
7574
0385
2646
2521
1415
2645
2520
7605
7370
2524
2523
7506
0383
7383
0384
7340
2522
7352
2353
7404
2800
2803
2802
2198
7170
2199
0378
1170
A16
T16
A1
T1
Y1
Y2
K1
A2
Y10
Y12
A10
A12
Y19
Y20
A19
A20
7321
7322
7323
7432
7433
6365
6366
6552
6551
6553
6554
6556
6555
6509
6508
6821
6393
6399

CL 36532051_29a.eps
240603

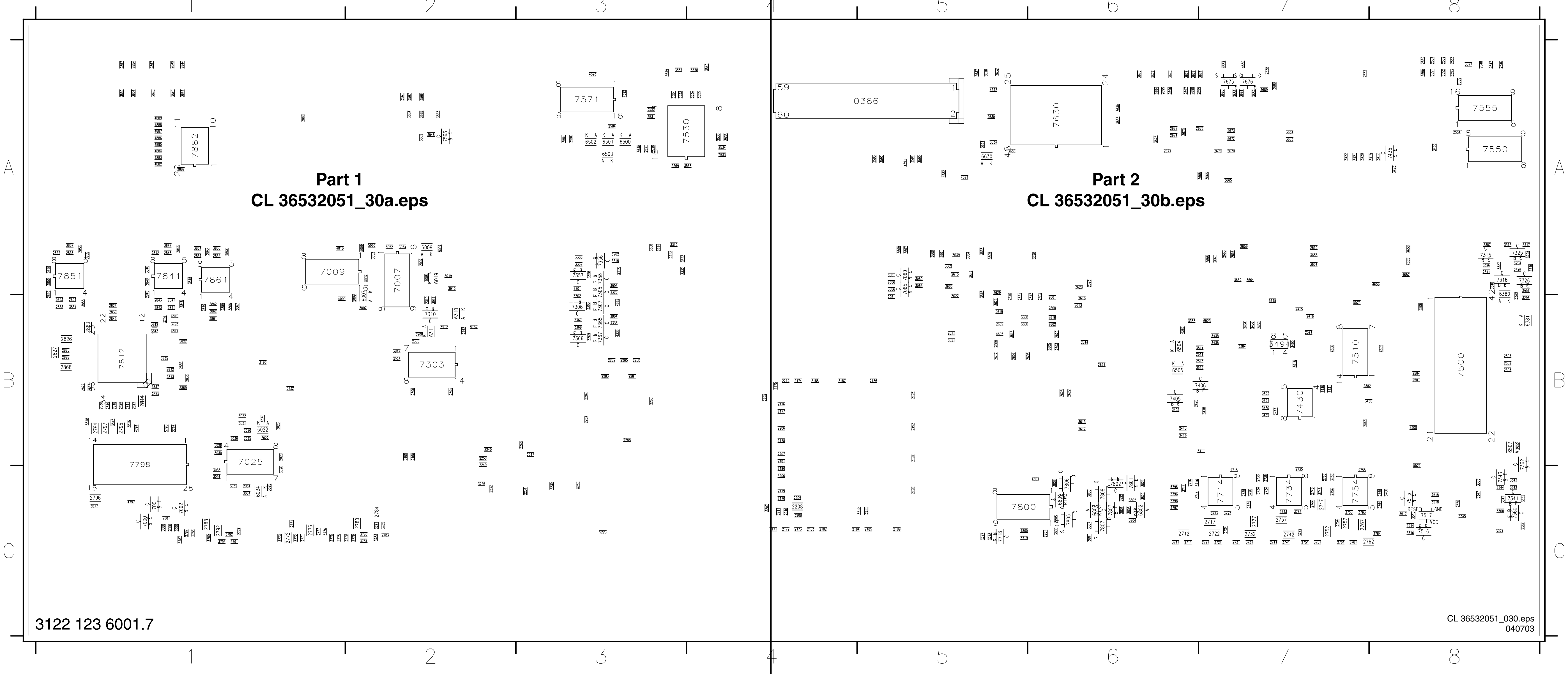
Layout SCAVIO Panel (Part 2 Top Side)


5
6
7
8
A
B
C
3122 123 6001.7
0316
0315
0319
0388
0387
2530
7540
7870
7880
7881
7874
1105
2144
2143
2150
2156
2147
2153
2159
2300
2308
2318
2328
7311
0318
7040
7041
2168
2810
2823
1835
2821
2820
2834
2816
2829
7158
7146
7100
7089
7280
7225
2302
2221
2112
2137
2072
7090
7088
2167
2164
2799
2140
2134
2116
2120
2077
2082
2196
2195
2228
2223
1250
2222
7175 OUT
2197
7215
2224
2220
IN GND
0375
0381
0379
0380
0377
6071
6274
6076
6091
6001
6010
6779
6775
6771
7130
7165
7141
7135
7117
7121
7079
7084
7080
7085
7006
7010
6820
6378
6379
7319
7333
7309
7308
7318
7328
7145
7151
7157
7148
7154
7160
7115
7107
7110
7111
7112
7131
7104
7129
7102
7103
7105
7113
7138
7074
7075
7879
6166
6302
1270
1171
6209
6204
6208
6206
6207
6205
6200
6201
6202
6203
6210
6214
b14
a13
n14
p13
a2
b1
p2
n1

CL 36532051_29b.eps
240603

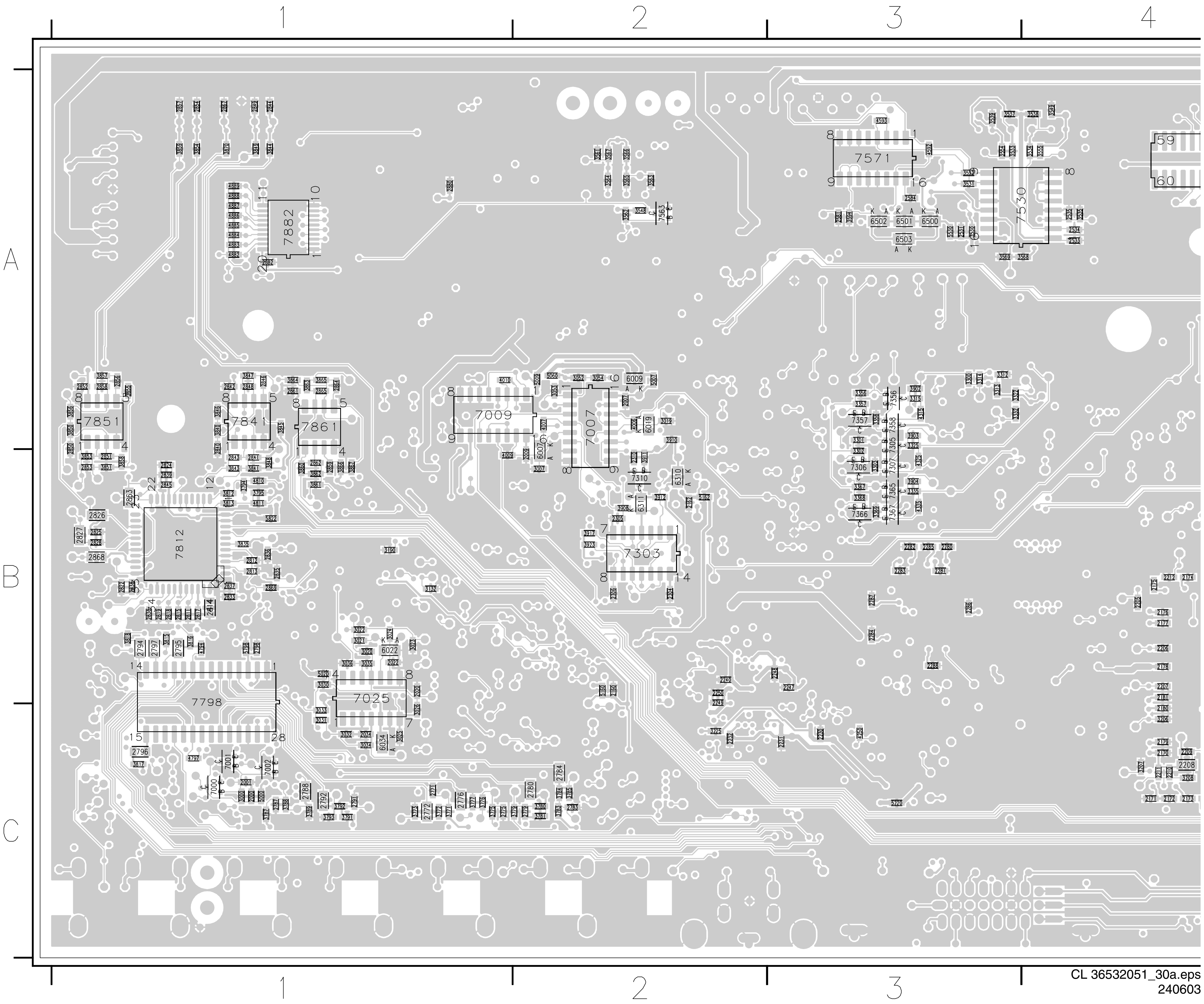
Layout SCAVIO Panel (Overview Bottom Side)

0386	A5
2000	C1
2001	C1
2007	A2
2009	B2
2020	B1
2022	B1
2034	C1
2061	B5
2066	A5
2160	B2
2162	B2
2170	C4
2171	C4
2172	C4
2173	C4
2174	B4
2175	B4
2176	B4
2177	B4
2178	B4
2179	C4
2180	C4
2181	B4
2182	C4
2183	C4
2184	C4
2185	C5
2186	B5
2187	B4
2188	B4
2189	C5
2190	C5
2191	B5
2192	B5
2193	B5
2205	B4
2206	B4
2207	B4
2208	C4
2209	C4
2210	C4
2211	C4
2212	B4
2230	C3
2231	C3
2232	C2
2240	B2
2247	B3
2248	B3
2249	B2
2250	B2
2280	B3
2281	B3
2282	B3
2283	B3
2284	B3
2285	B3
2286	B3
2287	B3
2288	B3
2304	B2
2305	B2
2306	B2
2310	B2
2341	A8
2345	A8
2356	C8
2381	B7
2382	B7
2415	B7
2416	B7
2418	B6
2419	B6
2420	B6
2432	B7
2434	B7
2436	B7
2439	B7
2448	B7
2500	B8
2501	B8
2502	B8
2503	B8
2504	B8
2505	B8
2506	B8
2511	B7
2513	B7
2515	C8
2531	A3
2533	A4
2534	A4
2535	A4
2537	A7
2538	A7
2546	A8
2547	A8
2548	A8
2550	A8
2551	A8
2552	A8
2553	A8
2554	A8
2555	A8
2581	A3
2584	A3
2600	B6
2601	B6
2602	B6
2603	B6
2604	B6
2605	B6
2606	B5
2607	B5
2608	B5
2609	B5
2610	B5
2611	B5
2612	B6
2613	B6
2614	B6
2615	A5
2616	B6
2617	B5
2618	B6
2619	B5
2620	B6
2621	B5
2622	B6
2623	A6
2624	B6
2625	B6
2629	A5
2630	A5
2655	A7
2656	A7
2658	A7
2659	A7
2660	A7
2661	A7
2666	A7
2670	A7
2671	A6
2672	A6
2673	A7
2674	A6
2694	A6
2695	A6
2696	A6
2697	A6
2698	A6
2699	A7
2711	C6
2712	C6
2714	C6
2715	C7
2716	C6
2717	C7
2721	C7
2722	C7
2724	C7
2726	C7
2727	C7
2731	C7
2732	C7
2734	C7
2735	C7
2736	C7
2737	C7
2741	C7
2742	C7
2744	C7
2746	C7
2747	C7
2751	C7
2752	C7
2754	C7
2755	C7
2756	C7
2757	C7
2761	C7
2762	C7
2764	C8
2766	C8
2767	C7
2771	C1
2772	C1
2775	C1
2776	C1
2779	C2
2780	C2
2783	C2
2784	C2
2787	C1
2788	C1
2791	C1
2792	C1
2794	B1
2795	B1
2796	C1
2797	B1
2798	B1
2801	C6
2804	C6
2811	B1
2812	B1
2813	B1
2814	B1
2815	B1
2817	B1
2818	B1
2819	B1
2822	B1
2824	B1
2825	B1
2826	B1
2827	B1
2828	B1
2830	B1
2833	B1
2835	B1
2836	B1
2837	B1
2838	B1
2839	B1
2840	A1
2841	B1
2842	A1
2843	B1
2844	A1
2845	B1
2846	A1
2848	A1
2849	A1
2850	A1
2851	B1
2852	A1
2853	B1
2854	A1
2856	A1
2857	A1
2858	A1
2859	B1
2861	A1
2862	B1
2863	B1
2864	A1
2865	A1
2867	A1
2868	B1
2869	B1
2880	A1
2882	A1
3000	C1
3007	B2
3018	B7
3019	A2
3020	B1
3021	B1
3022	B1
3023	B1
3024	B1
3025	C1
3026	C1
3030	B1
3031	C1
3032	C1
3033	C1
3034	C1
3035	B1
3036	B1
3052	A2
3053	A2
3054	A2
3060	A5
3061	A5
3065	A5
3066	A5
3132	B1
3190	B1
3206	C4
3207	C4
3208	C4
3211	C5
3212	C5
3225	C2
3294	A8
3295	A8
3296	B8
3300	A3
3301	A3
3302	B3
3303	B3
3307	A8
3312	A3
3313	A3
3314	A3
3315	A3
3317	A8
3322	A3
3325	A3
3326	A8
3327	A8
3332	A3
3335	B3
3341	C8
3342	C8
3343	C8
3344	C8
3345	C8
3347	C8
3348	A8
3349	B8
3350	C8
3356	A3
3357	A3
3358	A3
3360	C8
3361	C8
3362	C8
3367	B3
3368	B3
3369	B3
3372	A8
3384	B7
3388	B6
3400	A8
3405	B6
3411	B7
3417	A8
3418	B7
3419	A8
3420	A7
3421	A7
3422	A7
3423	A8
3430	B7
3431	B7
3432	B7
3433	B7
3435	B7
3436	B7
3450	B7
3490	B7
3494	B7
3507	B8
3511	B7
3513	B7
3514	C8
3515	C8
3516	C8
3517	C8
3518	C8
3530	A3
3531	A3
3532	A3
3533	A3
3534	A4
3535	A4
3537	A3
3538	A4
3539	A3
3548	A2
3549	A4
3550	A8
3551	A8
3552	A8
3553	A8
3554	A3
3555	A4
3561	A2
3562	A2
3563	A2
3564	A2
3565	A2
3566	A2
3567	A2
3568	A4
3569	A3
3577	A8
3590	A5
3591	A5
3592	A5
3593	A5
3594	A3
3600	A5
3601	A5
3602	A5
3603	A5
3604	A5
3605	A5
3606	B5
3607	A5
3608	B5
3609	A5
3612	B6
3613	B6
3615	B5
3616	A5
3617	A5
3620	A6
3621	B5
3622	B5
3623	B5
3628	A6
3630	A6
3631	A5
3632	A5
3633	A6
3634	A5
3636	A5
3637	A5
3638	A5
3639	A5
3653	A7
3654	A7
3661	A7
3662	A7
3663	A7
3664	A7
3665	A7
3666	A7
3670	A6
3671	A7
3672	A6
3673	A6
3674	A6
3675	A6
3676	A6
3677	A6
3681	A7
3682	A7
3685	A7
3686	A7
3688	A7
3689	A7
3711	C6
3713	C7
3714	C6
3716	C6
3717	C5
3718	C5
3719	C5
3721	C7
3723	C7
3724	C7
3726	C7
3731	C7
3733	C7
3734	C7
3736	C7
3741	C7
3743	C7
3744	C7
3746	C7
3751	C7
3753	C7
3754	C7
3756	C7
3761	C7
3763	C7
3764	C8
3766	C8
3771	C1
3772	C1
3773	C1
3775	C1
3776	C1
3777	C1
3779	C2
3780	C2
3781	C2
3783	C2
3784	C2
3785	C2
3787	C1
3788	C1
3789	C1
3791	C1
3792	C1
3793	C1
3794	B1
3795	B1
3796	C6
3797	C6
3798	C6
3800	C6
3801	C6
3802	C6
3803	C6
3804	C6
3805	C6
3806	C6
3807	C6
3808	C6
3812	B1
3813	B1
3815	B1
3816	B1
3817	C1
3818	B1
3820	C6
3821	C6
3822	C6
3835	B1
3840	A1
3841	B1
3843	B1
3844	A1
3845	A1
3846	A1
3847	A1
3848	B1
3849	A1
3850	A1
3851	B1
3853	B1
3854	A1
3855	A1
3856	A1
3857	A1
3858	B1
3859	A1
3860	B1
3861	B1
3862	B1
3863	A1
3864	A1
3865	A1
3866	B1
3867	B1
3870	A1
3901	A8
3902	A3
3903	A3
3904	B3
3908	B2
3910	A2
3911	B2
3912	B2
3917	B2
3921	C8
3923	B2
4006	A2
4007	A2
4009	B1
4010	A1
4250	C3
4315	A3
4316	A8
4325	B3
4335	B3
4385	B6
4430	B7
4431	B7
4505	B8
4506	B7
4581	A5
4582	A5
4591	A5
4592	A3
4593	A3
4605	B5
4632	A5
4655	A8
4656	A8
4657	A8
4658	A8
4680	A7
4684	A7
4794	B1
4797	C1
4800	C5
4801	C6
4810	B1
4811	B1
4882	A1
4883	A1
4884	A1
4885	A1
4886	A1
4887	A1
4888	A1
4889	A1
5000	C1
5007	A2
5009	A2
5020	B1
5060	A2
5160	B2
5162	B2
5220	C3
5521	B7
5522	C8
5523	B7
5530	A3
5630	A5
5645	B7
5670	A7
5672	A7
5673	A7
5796	C6
5798	B1
5822	B1
6007	B2
6009	A2
6019	A2
6022	B1
6034	C1
6310	B2
6311	B2
6380	A8
6381	B8
6500	A3
6501	A3
6502	A3
6503	A3
6504	B6
6505	B6
6507	B8
6630	A5
6802	C6
6805	C6
6807	C6
7000	C1
7001	C1
7002	C1
7007	A2
7009	A1
7025	B1
7060	A5
7065	A5
7303	B2
7305	A3
7306	B3
7307	B3
7310	B2
7315	A8
7316	A8
7325	A8
7326	A8
7341	C8
7343	C8
7356	A3
7357	A3
7358	A3
7360	C8
7362	B8
7365	B3
7366	B3
7367	B3
7405	B6
7406	B7
7430	B7
7435	A8
7500	B8
7510	B7
7515	C8
7516	C8
7517	C8
7530	A3
7550	A8
7555	A8
7563	A2
7571	A3
7630	A6
7675	A7
7676	A7
7714	C7
7718	C5
7734	C7
7754	C7
7798	B1
7800	C5
7801	C6
7802	C6
7803	C6
7805	C6
7806	C6
7807	C6
7808	C6
7812	B1
7841	A1
7851	A1
7861	A1
7882	A1



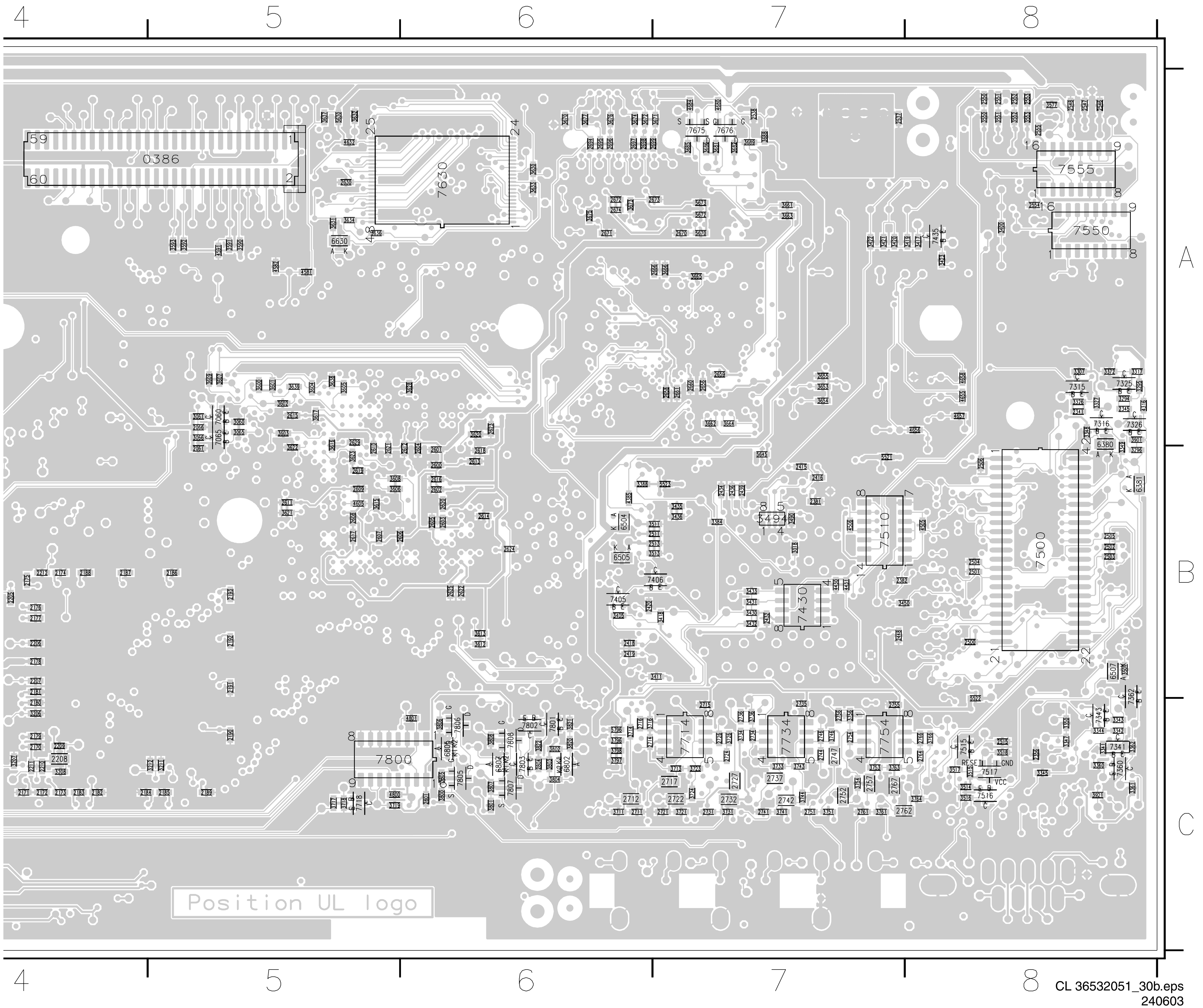
CL 36532051_030.eps
040703

Layout SCAVIO Panel (Part 1 Bottom Side)


1
2
3
4
A
B
C
7882
7571
7530
7851
7841
7861
7009
7007
7303
7812
7798
7025
6009
6022
6034
6502
6501
6500
6503
2826
2827
2868
2796
2208

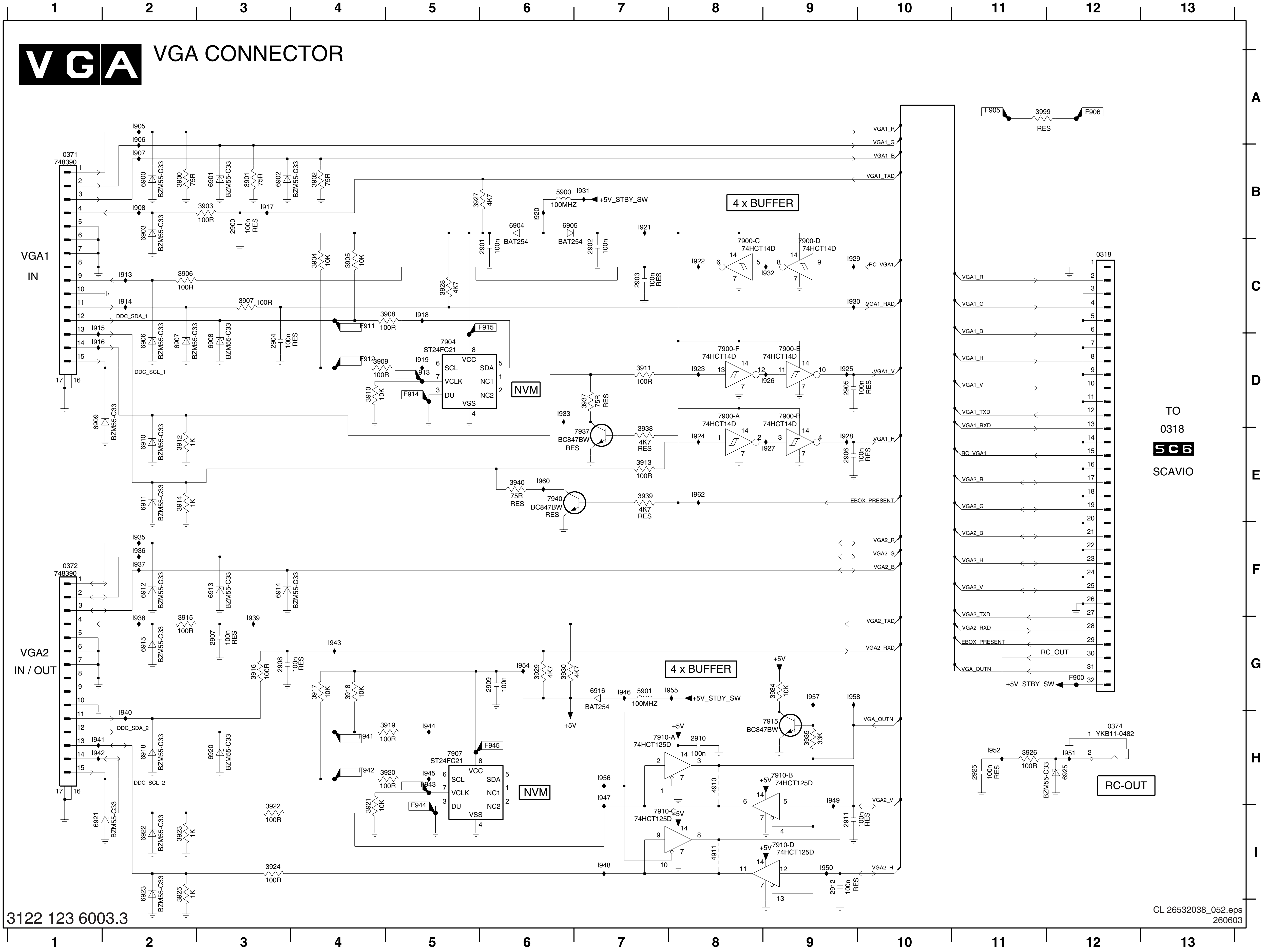
CL 36532051_30a.eps
240603

Layout SCAVIO Panel (Part 2 Bottom Side)


4
5
6
7
8
A
B
C
0386
59
60
7630
7555
7550
7500
7510
7430
7714
7734
7754
7800
Position UL logo

CL 36532051_30b.eps
240603

VGA Connector Panel

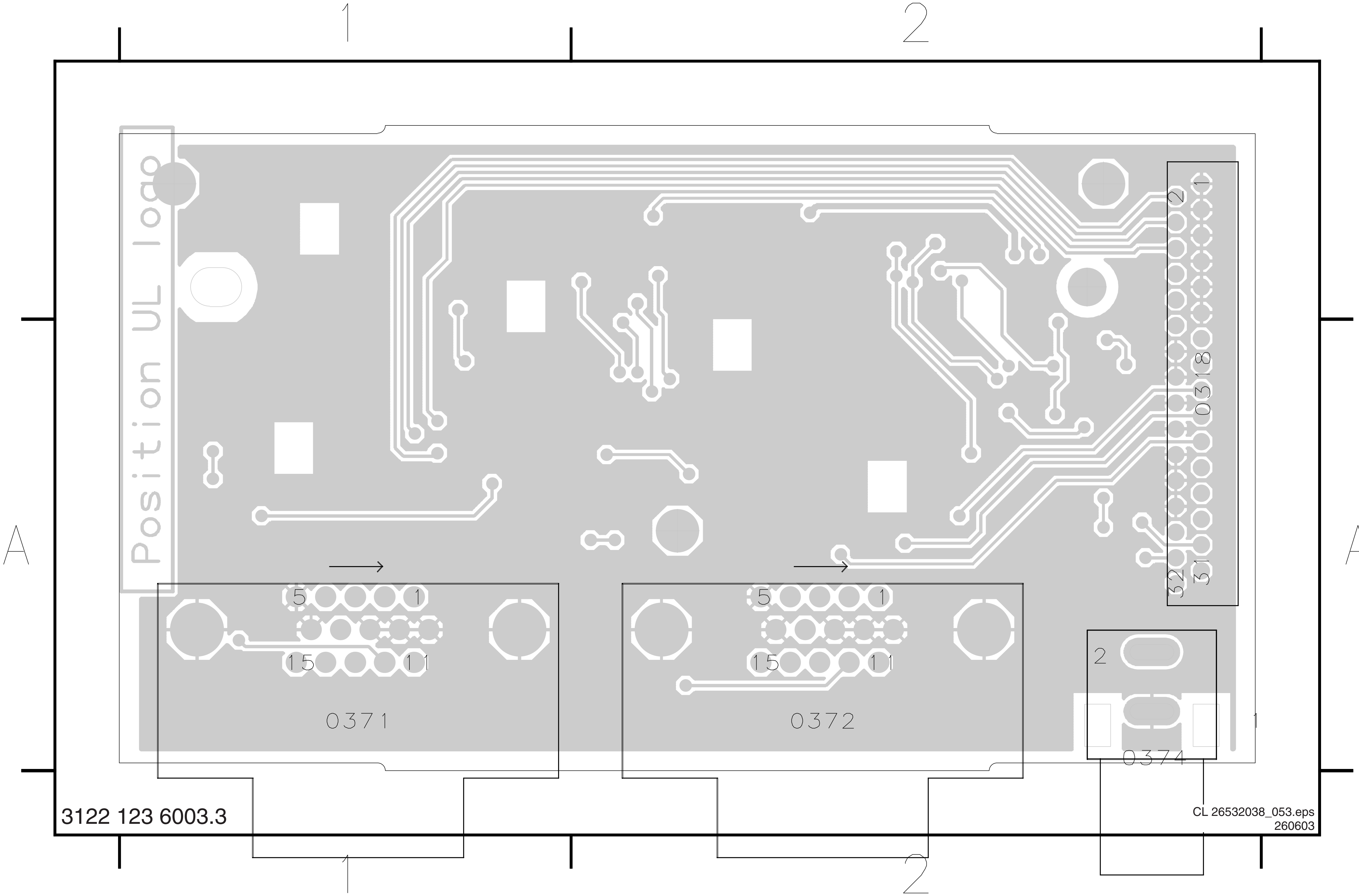

VGA
VGA CONNECTOR
VGA1
IN
VGA2
IN / OUT
0371
748390
0372
748390
4 x BUFFER
NVM
7904
ST24FC21
7907
ST24FC21
SCL
VCLK
DU
VCC
SDA
NC1
NC2
VSS
7900-C
74HCT14D
7900-D
74HCT14D
7900-F
74HCT14D
7900-E
74HCT14D
7900-A
74HCT14D
7900-B
74HCT14D
7910-A
74HCT125D
7910-B
74HCT125D
7910-C
74HCT125D
7910-D
74HCT125D
7937
BC847BW
7940
BC847BW
7915
BC847BW
6904
BAT254
6905
BAT254
6916
BAT254
5900
100MHZ
5901
100MHZ
+5V_STBY_SW
+5V
DDC_SDA_1
DDC_SCL_1
DDC_SDA_2
DDC_SCL_2
VGA1_R
VGA1_G
VGA1_B
VGA1_TXD
VGA1_RXD
VGA1_V
VGA1_H
RC_VGA1
EBOX_PRESENT
VGA2_R
VGA2_G
VGA2_B
VGA2_TXD
VGA2_RXD
VGA2_OUTN
VGA2_V
VGA2_H
VGA2_OUTN
0318
TO
0318
SC6
SCAVIO
RC_OUT
F900
0374
YKB11-0482
RC-OUT
3999
RES
F905
F906
BZM55-C33

3122 123 6003.3

CL 26532038_052.eps
260603

0318	C13
0371	B1
0372	F1
0374	H13
2900	B3
2901	C6
2902	C7
2903	C7
2904	D3
2905	D9
2906	E9
2907	G3
2908	G3
2909	G6
2910	H8
2911	I9
2912	I9
2925	H11
3900	B2
3901	B3
3902	B4
3903	B3
3904	C4
3905	C4
3906	C2
3907	C3
3908	C5
3909	D5
3910	D5
3911	D7
3912	E2
3913	E7
3914	E2
3915	G2
3916	G3
3917	G4
3918	G4
3919	H5
3920	H5
3921	I5
3922	I3
3923	I2
3924	I3
3925	I2
3926	H12
3927	B5
3928	C5
3929	G6
3930	G6
3934	G9
3935	H9
3937	D6
3938	E7
3939	E7
3940	E6
3999	A12
4910	H8
4911	I8
5900	B6
5901	G7
6900	B2
6901	B3
6902	B3
6903	B2
6904	B6
6905	B6
6906	D2
6907	D2
6908	D3
6909	D1
6910	E2
6911	E2
6912	F2
6913	F3
6914	F3
6915	G2
6916	G7
6918	H2
6920	H3
6921	I1
6922	I2
6923	I2
6925	H12
7900-A	D8
7900-B	D9
7900-C	C8
7900-D	C9
7900-E	D9
7900-F	D8
7904	D5
7907	H5
7910-A	H7
7910-B	H9
7910-C	I7
7910-D	I9
7915	H9
7937	E6
7940	E6
F900	G12
F905	A11
F906	A12
F911	C4
F912	D4
F913	D5
F914	D5
F915	D5
F941	H4
F942	H4
F943	H5
F944	I5
F945	H5
I905	A2
I906	A2
I907	B2
I908	B2
I913	C2
I914	C2
I915	C1
I916	D1
I917	B3
I918	C5
I919	D5
I920	B6
I921	B7
I922	C8
I923	D8
I924	E8
I925	D9
I926	D9
I927	E9
I928	E9
I929	C9
I930	C9
I931	B7
I932	C9
I933	D6
I935	F2
I936	F2
I937	F2
I938	G2
I939	G3
I940	H2
I941	H1
I942	H1
I943	G4
I944	H5
I945	H5
I946	G7
I947	H6
I948	I6
I949	H9
I950	I9
I951	H12
I952	H12
I954	G6
I955	G8
I956	H7
I957	G9
I958	G9
I960	E6
I962	E8

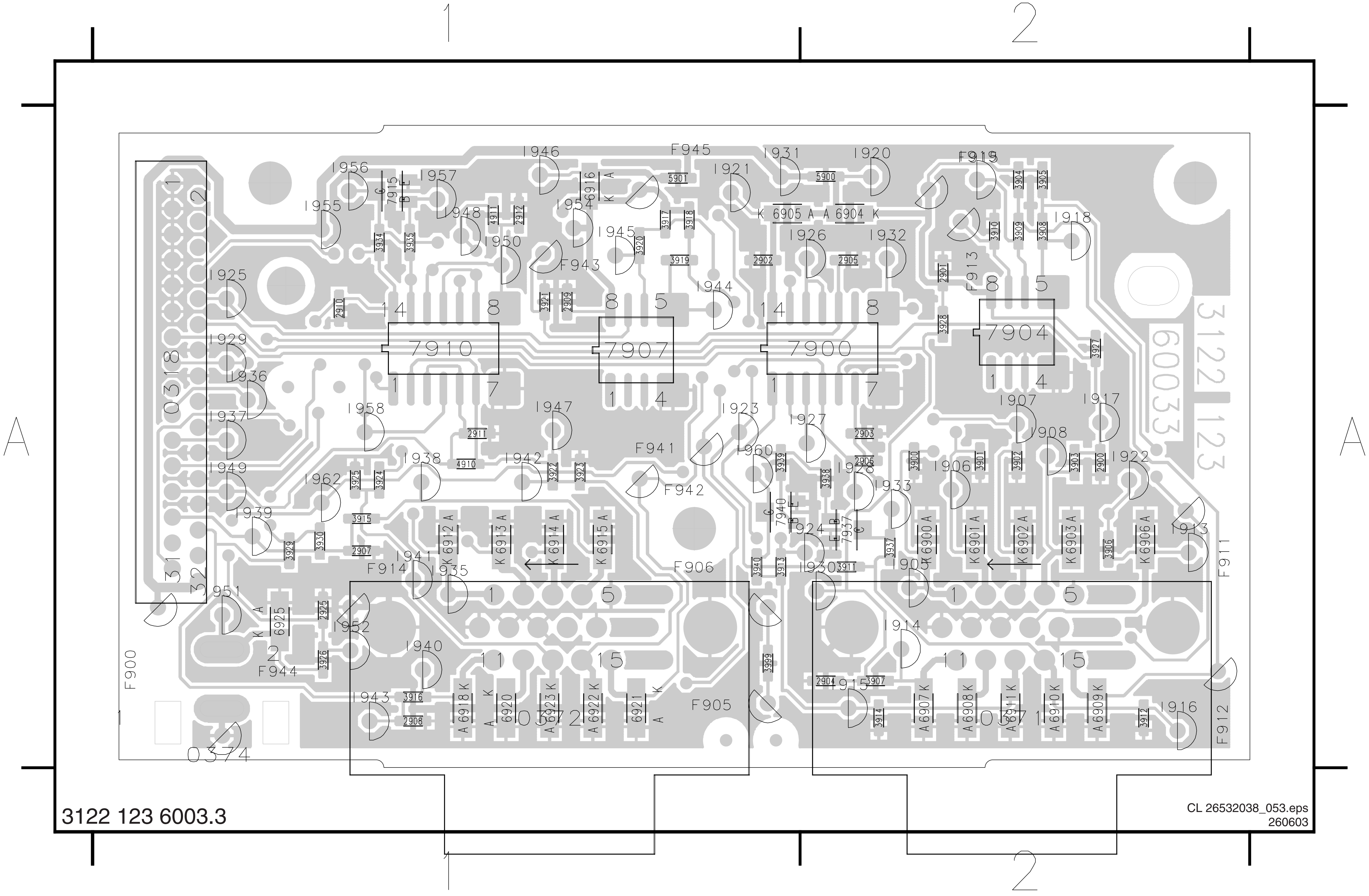
Layout VGA Connector Panel (Top Side)


1
2
A
A
Position UL logo
0318
2
1
32
31
5
1
15
11
0371
0372
2
1
0374
3122 123 6003.3

CL 26532038_053.eps
260603

0318	A2
0371	A1
0372	A2
0374	A2

Layout VGA Connector Panel (Bottom Side)


1
2
A
A
1
2
0318
0371
0372
0374
7910
7907
7900
7904
3122 123 6003.3
CL 26532038_053.eps
260603

0318	A1
0371	A2
0372	A1
0374	A1
2900	A2
2901	A2
2902	A1
2903	A2
2904	A2
2905	A2
2906	A2
2907	A1
2908	A1
2909	A1
2910	A1
2911	A1
2912	A1
2925	A1
3900	A2
3901	A2
3902	A2
3903	A2
3904	A2
3905	A2
3906	A2
3907	A2
3908	A2
3909	A2
3910	A2
3911	A2
3912	A2
3913	A1
3914	A2
3915	A1
3916	A1
3917	A1
3918	A1
3919	A1
3920	A1
3921	A1
3922	A1
3923	A1
3924	A1
3925	A1
3926	A1
3927	A2
3928	A2
3929	A1
3930	A1
3934	A1
3935	A1
3937	A2
3938	A2
3939	A1
3940	A1
3999	A1
4910	A1
4911	A1
5900	A2
5901	A1
6900	A2
6901	A2
6902	A2
6903	A2
6904	A2
6905	A1
6906	A2
6907	A2
6908	A2
6909	A2
6910	A2
6911	A2
6912	A1
6913	A1
6914	A1
6915	A1
6916	A1
6918	A1
6920	A1
6921	A1
6922	A1
6923	A1
6925	A1
7900	A2
7904	A2
7907	A1
7910	A1
7915	A1
7937	A2
7940	A1

8. Electrical Alignments

Index of this chapter:

1. General Alignment Conditions
2. Hardware Alignments
3. Software Alignments and Settings

Note: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the "CURSOR UP, DOWN, LEFT, OR RIGHT" keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:
Mains voltage and frequency: 220 V_ac / 50 Hz unless otherwise stated.
Connect the set to the Mains via an isolation transformer.
Allow the set to warm up for approximately 20 minutes.
Measure the voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply). Never use the cooling fins/plates as ground.
Test probe: Ri > 10 Mohm, Ci < 2.5 pF.
Use an isolated trimmer/screwdriver to perform the alignments.

Use a VGA-generator (e.g. Astro) or a Personal Computer (*) as test pattern generator (contact your National Service Organisation for the necessary PC test pattern files) and connect it to the VGA1 input of the plasma monitor. When you use a PC, start Microsoft PowerPoint (or Paintbrush), and load the mentioned file. Then display the picture as full screen.

(*) If you use a PC as generator, please check (measure) if the video output signals fulfil the VGA standards (see chapter 1).

8.2 Hardware Alignments

There are no hardware alignments necessary.

8.3 Software Alignments

Enter the Service Alignment Mode (see chapter 5). The SAM menu will now appear on the screen.
Select one of the following alignment menus via the upper horizontal bar:

1. GENERAL (GEN.)
2. DISPLAY (DISP.)
3. SCALER (SCAL.)
4. VIDEO 1 (VID.1)
5. VIDEO 2 (VID.2)
6. OPTIONS (OPT.)

The last three items are not available in the Basic configuration.

Note: There are several methods to exit the SAM, each with its own characteristics:

- Switch the set "off" (with the Mains switch or by pulling the Mains cord); new alignment settings are **always** stored, even when item "store" was not activated!
- Switch the set to "standby" by pressing the power button on the remote control transmitter; new alignment settings are **always** stored, even when item "store" was not activated!
- Use a standard RC-transmitter and key in the code **00**; new alignment settings are **not** stored, except when item "store" was activated!

8.3.1 GENERAL

Table 8-1 SAM Menu "GEN."

Service Alignment Menu	General (Gen.)
Type nr. - AG Code	32FD9944/01S (example)
SW version OTC	AAAABC-X.Y xxxxx
SW version PW	AAAABC-X.Y xxxxx
SW version EPLD	AAAABC-X.Y xxxxx
Errors 1	xx xx xx xx xx
Errors 2	xx xx xx xx xx
Operational hours	xx
Reset error buffer	Press OK to reset
Store	Press OK to store

This menu is fully explained in chapter 5.

STORE
Select this item, and press OK, to store the alignments.

8.3.2 DISPLAY

Table 8-2 SAM Menu "DISP."

Service Alignment Menu	Display (Disp.)
Test pattern	On / Off
Contrast	Adjust ...
Gamma	Adjust ...
White point	Adjust ...
Compensation fact.	0 <-------|-------> 255 128

TEST PATTERN
Possible to generate an "even white" test pattern, which is generated by the PDP. You can use this picture, to check the plasma display for pixel defects.

CONTRAST
Not necessary to align, fixed value is "255".

GAMMA
Not necessary to align, fixed value is "2".

WHITE POINT
Not necessary to align, unless stated by the NSO. Fixed value is "255".

COMPENSATION FACTOR
Not necessary to change. Fixed value is "128". In some cases however, a new software table must be loaded in the Pixel Works Scaler (via ComPair). The following service scenarios are possible:

- **When a defective glass filter plate is replaced:** This requires a new "White Point" adjustment (see next paragraph).
- **When a defective PDP is replaced by the same type:** This requires a new "White Point" adjustment (see next paragraph).
- **When a defective PDP is replaced by another (newer) type:** This requires both a new compensation table upload (by ComPair), and a new "White Point" adjustment (see next paragraph). **Note:** The loaded software, performs the settings automatically.
- **When a new software table must be loaded in the Pixel Works Scaler (e.g. in case of a software update):** This requires both a new compensation table upload (by

ComPair), and a new "White Point" adjustment (see next paragraph).
Note: The loaded software, performs the settings automatically.

8.3.3 SCALER

Table 8-3 SAM Menu "SCAL."

Service Alignment Menu	Scaler (Scal.)
Test pattern	On / Off
Color temperature	6500K / 8700K / 10000K
White point	Adjust ...
Align ADC	Press OK to execute
Clear user settings	Press OK to clear

TEST PATTERN

This function makes it possible to generate a "colour bar" test pattern (generated by the PW Scaler IC). You can use this picture, to check the video path, starting at the PW Scaler IC to the plasma display.

COLOUR TEMPERATURE

Select the appropriate colour temperature for the alignments (see also "White point" adjustment below).

WHITE POINT

Table 8-4 SAM Menu "SCALER - WHITE POINT"

Service Alignment Menu	Scaler - White point
White point red	<-------------|------------> 125
White point green	<---------|----------------> 100
White point blue	<-----------|--------------> 110
Press OK when done	

Notes:

- First align the ADC (see ALIGN ADC) **before** aligning the WHITE POINT.
- The alignment values should NOT exceed the value "128".

Method 1 (with colour analyser)

Supply, via an external VGA source (e.g. a VGA generator, or a PC in 640x480 mode), a "**White Drive**" test pattern (ask your NSO for the PC file). This picture consists of black picture (0 mV) with in the middle a 100% white (0.7 V) square with dimensions 202x152.

1. Set "Brightness" to "50" and "Contrast" to "71" (via the standard customer menu).
2. Go to the SAM menu.
3. Set COLOR TEMPERATURE to "8700 K" (with the introduction of the high brightness H2 plasma panels, the "NORMAL" colour temperature is adapted from "7600 K" to "8700 K").
4. Measure with a CTV colour analyser (calibrated with the spectra) on the centre of the white square on the screen.
5. Select WHITE POINT in the SAM SCALER menu, and press CURSOR RIGHT.
6. Adjust with the CURSOR UP/DOWN or LEFT/RIGHT command, the three WHITE POINTS RED, GREEN and BLUE to "128" (do **not** go above this value!), and align with one or two of the drivers to the correct coordinates (see table).
7. Repeat the same measurement for respectively colour temperature "6500 K" and "10000 K".
8. Repeat again if necessary.

Table 8-5 White Point XY-coordinates

Colour Temperature	x	y
6500 K (Cool)	313	329
8700 K (Normal)	289	299
10000 K (Warm)	280	289

Method 2 (without colour analyser)

Without having a CTV colour analyser, it is possible to directly set some parameters, which are based on average values from production.

Table 8-6 White point RGB-values 32-inch monitor

Col. Temp. 32"	R	G	B
6500 K (Cool)	114	125	128
8700 K (Normal)	119	128	128
10000 K (Warm)	125	128	115

Table 8-7 White point RGB-values 37-inch monitor

Col. Temp. 37”	R	G	B
6500 K (Cool)	112	128	127
8700 K (Normal)	117	128	124
10000 K (Warm)	119	128	111

Table 8-8 White point RGB-values 42-inch monitor

Col. Temp. 42"	R	G	B
6500 K (Cool)	116	126	128
8700 K (Normal)	119	128	125
10000 K (Warm)	127	127	112

ALIGN ADC

Supply, via an external VGA source (e.g. a PC, mode 640x480), the "**ADC alignment**" test pattern (ask your NSO for the PC file).
The upper 360 lines of this picture consists of a half black and half white picture with the following settings (on a full scale of "255"):

- Black "17" (47 mV).
- White "255" (700 mV).

The lower 120 lines of this picture, are vertically divided into 4 boxes of 160 pixels each with (from left to right) the following settings:

- Black "0" (0 mV).
- Black "5" (14 mV).
- White "250" (686 mV).
- White "255" (700 mV).

1. Go to the SAM menu.
2. Select ALIGN ADC in the SAM Scaler menu, and press CURSOR RIGHT.
3. The alignment is performed automatically.

CLEAR USER SETTINGS

In some (rare) cases it is possible that the PW Scaler recalls settings, which are made earlier by the user (e.g. "phase" or "shift"), and not the last (wanted) settings. To correct this problem, one can select this function.

8.3.4 VIDEO 1 (Enhanced version only)

Table 8-9 SAM Menu "VID. 1"

Service Alignment Menu	Video 1 (Vid. 1)
Test pattern	On / Off
Brightness	0 <-----------|---------- > 255
Contrast	0 <-----------|---------- > 255
Sharpness	0 <-----------|---------- > 255

TEST PATTERN

This function makes it possible to generate a "full white" test pattern (generated by the de-interlacer SDA9400, item 7280). You can use this picture, to check the video path of the external inputs AV1, AV2, and AV3, starting at item 7280 (**mind you:** the proper functioning of the Digital Video Decoder SAA7118 is not tested!).

Note: To generate the test pattern, it is necessary to feed a signal to one of the AV-inputs.

BRIGHTNESS

This is the setting of IC7225 (SAA7118). Not necessary to align, fixed value is:

- "132" for PAL/SECAM.
- "139" for NTSC.

CONTRAST

This is the setting of IC7225 (SAA7118). Not necessary to align, fixed value is:

- "139" for PAL/SECAM.
- "128" for NTSC.

SHARPNESS

Not necessary to align, fixed value is "6".

8.3.5 VIDEO 2 (Enhanced version only)

Table 8-10 SAM Menu "VID. 2"

Service Alignment Menu	Video 2 (Vid. 2)
Lum. delay PAL	0 <-----------|---------- > 7
Lum. delay SECAM	0 <-----------|---------- > 7
Lum. delay NTSC	0 <-----------|---------- > 7

With these alignments, you can place the luminance information on the chrominance information (push brightness onto the colour). Use a colour bar/grey scale pattern as test signal. These values are normally fixed.

LUM. DELAY PAL

Apply a PAL colour bar/grey scale pattern as a test signal. Adjust value until the transients of the colour part and black and white part of the test pattern are at the same position. Fixed value is "4".

LUM. DELAY SECAM

Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust value until the transients of the colour part and black and white part of the test pattern are at the same position. Fixed value is "4".

LUM. DELAY NTSC

Apply a NTSC colour bar/grey scale pattern as a test signal. Adjust value until the transients of the colour and black & white part of the test area are at the same position. Fixed value is "4".

8.3.6 OPTIONS (Enhanced version only)

Table 8-11 SAM Menu "OPT."

Service Alignment Menu	Options (Opt.)
Vs/Va control	On / Off
Display size	32" / 42"
Virgin	On / Off
ICONN control	On / Off
FAN control	On / Off

Vs/Va CONTROL

When this option is set to "on", it will enable the "PDP feedback loop" for the **automatic** V_s and V_a alignment. See table below for the correct setting.

Table 8-12 V_s/V_a Control options

	PSU version 3	**PSU v.3 with precision R's**	**PSU version 4**
PDP with Vs feedback (-52 PDP)	Feedback loop 'OFF', alignment is necessary.	Feedback loop 'ON', but alignment (check) is necessary (see par. 8.2 for values) .	Feedback loop 'ON', no alignment necessary.
PDP with Vs/ Va feedback (with 'B' in serial number)	Feedback loop 'OFF', alignment is necessary.	Feedback loop 'ON', no alignment (check) necessary.	Feedback loop 'ON', no alignment necessary.

DISPLAY SIZE

This option is only meant for the factory, to indicate the display size for the software.

Note: When none of the items is highlighted, the 37-inch display is selected.

VIRGIN

Normally "off". When this option is set to "on", the display starts with the language selection menu.

ICONN CONTROL

Normally "off". Set this option to "on" in case a so-called "ICONN"-box (for Hotel TV) is connected to the display.

Caution: When this option is set to "on", **without an ICONN-Box** connected to the monitor, one cannot control the monitor anymore (because the RC connection is interrupted).

There are two ways to restore the remote control again:

Connect pin 8 (IR_TX) to pin 9 (IR_RX) on the RS232 connector of the monitor (the easiest way to do this, is to make a "dummy" connector with these pins connected, and plug this into the monitor), or

Set the set in the Service Alignment Mode (SAM) via **shorting jumpers 1 and 2 of connector 0382** on the SCAVIO panel.

After this, you can enter the appropriate menu to set ICONN CONTROL to "off" again.

FAN CONTROL

Normally "off". Set this option to "on", when the optional fans are mounted (ask your NSO for info).

9. Circuit Descriptions, List of Abbreviations, and IC Data Sheets

Index of this chapter:

1. Introduction
2. Power Supply Unit
3. VGA connector Panel
4. SCAVIO Panel
5. Audio Amplifier Panel
6. LED/Switch Panel
7. Plasma Display Panel
8. Abbreviations
9. IC Data Sheets

Notes:

- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the diagrams in chapter 6 and 7. Where necessary, you will find a separate drawing for clarification.

9.1 Introduction

The FM-chassis is the 3rd generation Philips plasma monitors. In comparison to the FTV1.9DE, it has:

- A power supply that is based on the MG-chassis,
- A new SCAVIO panel, which takes over the tasks of the former AVC and LIMESCO panels.
- A new, class-D, audio amplifier,
- A new, improved, Plasma Display Panel (with new ALiS technology).

It is possible to use this product as stand-alone monitor or, in combination with the so-called F21RE Receiver box, for TV applications.

In this manual, we combined three screen sizes (32-inch as FM23, 37-inch as FM33, and 42-inch as FM24) into one manual. When there are important differences between these versions, this is explicitly mentioned.

For these chassis, there are two configurations:

- **Basic:** which has one video input (VGA1) and one video output (VGA2). The VGA2 video output is directly connected to the VGA1 video input, without any processing. The audio output of VGA2 is also directly connected to the VGA1 audio input.
- **Enhanced:** which has six video inputs (VGA1, VGA2, DVI-D, CVBS, YC and HD) and six corresponding audio inputs. These inputs are internally converted to the appropriate signals. The VGA2 connection is here bi-directional (Flex-VGA).

Note: In all descriptions below, the *Enhanced* version of this FM-chassis is discussed. When there are important differences between the *Basic* and *Enhanced* versions, this is mentioned.

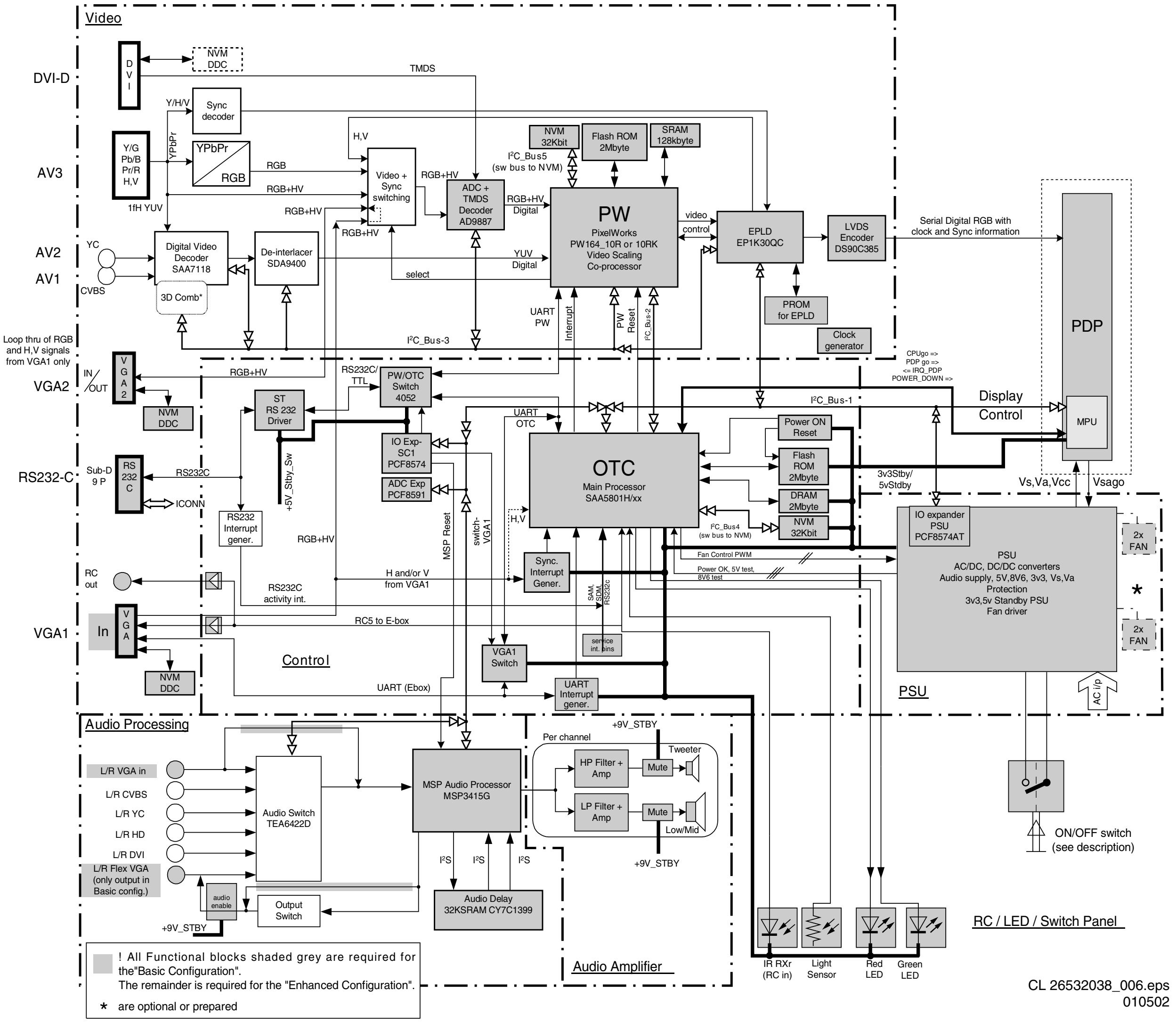

Video
DVI-D
DVI
NVM DDC
TMDS
AV3
Y/H/V
Sync decoder
Y/G Pb/B Pr/R H,V
YPbPr
YPbPr RGB
RGB
RGB+HV
1fH YUV
H,V
Video + Sync switching
RGB+HV
ADC + TMDS Decoder AD9887
NVM 32Kbit
Flash ROM 2Mbyte
SRAM 128kbyte
I²C_Bus5 (sw bus to NVM)
RGB+HV Digital
PW
PixelWorks PW164_10R or 10RK Video Scaling Co-processor
video
control
EPLD EP1K30QC
LVDS Encoder DS90C385
Serial Digital RGB with clock and Sync information
AV2
AV1
YC
CVBS
Digital Video Decoder SAA7118
De-interlacer SDA9400
3D Comb*
select
YUV Digital
UART PW
Interrupt
PW Reset
I²C_Bus-2
PROM for EPLD
Clock generator
PDP
I²C_Bus-3
Loop thru of RGB and H,V signals from VGA1 only
VGA2
IN/OUT
RGB+HV
RS232C/TTL
PW/OTC Switch 4052
CPUgo => PDP go => <= IRQ_PDP POWER_DOWN =>
I²C_Bus-1
Display Control
MPU
NVM DDC
ST RS 232 Driver
UART OTC
Power ON Reset
IO Exp-SC1 PCF8574
OTC
Main Processor SAA5801H/xx
Flash ROM 2Mbyte
RS232-C
Sub-D 9 P
RS 232 C
RS232C
+5V_Stby_Sw
ADC Exp PCF8591
DRAM 2Mbyte
3v3Stby/ 5vStdby
Vs,Va,Vcc
Vsago
ICONN
RS232 Interrupt gener.
MSP Reset
switch-VGA1
H,V
I²C_Bus4 (sw bus to NVM)
NVM 32Kbit
IO expander PSU PCF8574AT
2x FAN
RGB+HV
Fan Control PWM
Power OK, 5V test, 8V6 test
PSU AC/DC, DC/DC converters Audio supply, 5V,8V6, 3v3, Vs,Va Protection 3v3,5v Standby PSU Fan driver
RC out
H and/or V from VGA1
Sync. Interrupt Gener.
RS232C activity int.
SAM SDM RS232c
*
RC5 to E-box
VGA1
In
VGA
service int. pins
2x FAN
NVM DDC
Control
VGA1 Switch
UART (Ebox)
UART Interrupt gener.
PSU
AC i/p
Audio Processing
+9V_STBY
Per channel
Tweeter
L/R VGA in
L/R CVBS
L/R YC
L/R HD
L/R DVI
L/R Flex VGA (only output in Basic config.)
Audio Switch TEA6422D
MSP Audio Processor MSP3415G
HP Filter + Amp
Mute
LP Filter + Amp
Mute
Low/Mid
I²S
I²S
I²S
+9V_STBY
ON/OFF switch (see description)
audio enable
Output Switch
Audio Delay 32KSRAM CY7C1399
+9V_STBY
RC / LED / Switch Panel
Audio Amplifier
IR RXr (RC in)
Light Sensor
Red LED
Green LED
! All Functional blocks shaded grey are required for the"Basic Configuration".
The remainder is required for the "Enhanced Configuration".
* are optional or prepared
CL 26532038_006.eps
010502

Figure 9-1 Control and Data Path

9.1.1 Input/Output

The main inputs are:

- **Basic:** VGA only,
- **Enhanced:** VGA, Flex-VGA, DVI-D, HD-RGB+HV, HD-2fH-YPbPr (sync on Y), 1fH-YCbCr (sync on Y), YC, CVBS on cinch. Flex-VGA gives the user a choice to configure the "loop-through VGA output" as an output or as input.

9.1.2 Video

This mainly consists of an analogue processing part and a digital processing part. The video inputs like VGA (*Basic* configuration), CVBS, YC, HD-RGB/YUV (1fH and 2fH) and DVI-D are received and processed.
The VGA signals are first converted to digital signals and then processed by the PW Scaler.

The YPbPr (2fH) signal is discretely converted to RGB, whereas the YCbCr (1fH) signal is processed in the SAA7118 Digital Video decoder.

The base-band video inputs (CVBS and YC) are output from this decoder as digital YUV, which are then further processed by the Pixel Works Scaler (PW).

The signals on the digital DVI input are first decoded by the TMDS decoder inside the AD9887 and then processed by the PW Scaler.

The PW Scaler output is going through an EPLD and then via an LVDS Encoder to the Fujitsu/Hitachi PDP (Plasma Display Panel) as differential serial data. This PDP is based on ALiS (Alternate Lighting of Surface) technology and is an interlaced display, with separate odd and even fields to be displayed.

9.1.3 Audio

This mainly hosts the audio inputs for the various video inputs. They go through an I2C controlled source selector. The main audio processing is done by the Micronas MSP3415G version with built-in Ultra Bass-II algorithm.

A digital delay line is created using the I2S channel and SRAM. The delay created can be selected between two values, one for the Receiver box, and one for the Monitor.

The processed audio signals are then differentially transmitted to the audio amplifier panel. This amplifier drives a tweeter and a twin-drive woofer (low/mid range). Active filtering is done before the amplifiers.

9.1.4 Control

The main controller is the OTC, referred to as the "main processor". This operates in co-ordination with the processor in the Pixel Works Scaler (PW), referred to as the "co-processor".

When the plasma monitor is connected to an F21RE Receiver box, the UART commands from the Receiver box will control the monitor.
In stand-alone mode, the monitor can be controlled via the Remote Control or via the RS232C port.

DDC1/2B (Digital Data Channel, an I2C-based protocol) is implemented with separate identification NVMs for the two VGA inputs and the DVI-D input as well. In addition, the RS232C port can be used for software download to the PW and the OTC. The target for downloading is controlled via a switch in the RS232C path; the switch itself is controlled by the OTC.

9.1.5 Power Supply

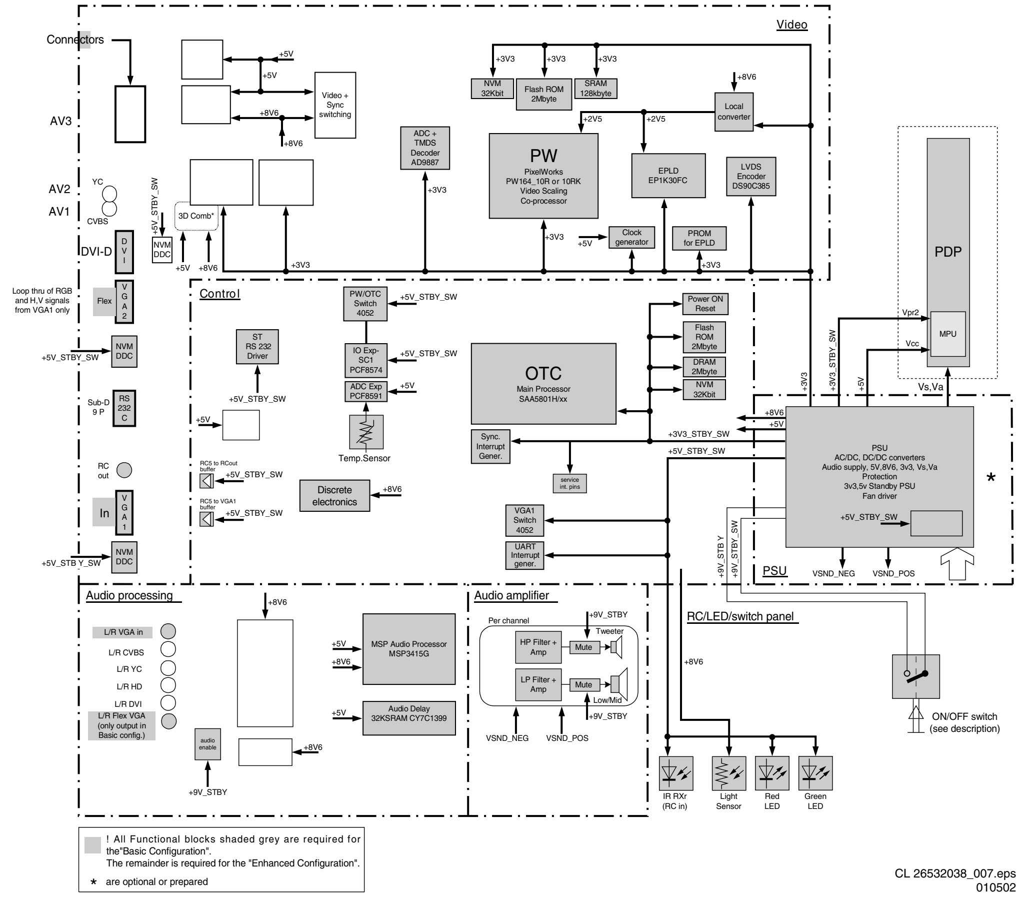

Video
Connectors
AV3
AV2
AV1
YC
CVBS
DVI-D
D V I
Loop thru of RGB and H,V signals from VGA1 only
Flex
V G A 2
+5V_STBY_SW
NVM DDC
Sub-D 9 P
RS 232 C
RC out
In
V G A 1
+5V_STB Y_SW
+5V
+8V6
Video + Sync switching
3D Comb*
NVM DDC
+5V_STBY_SW
+3V3
ADC + TMDS Decoder AD9887
NVM 32Kbit
Flash ROM 2Mbyte
SRAM 128kbyte
PW
PixelWorks PW164_10R or 10RK Video Scaling Co-processor
+2V5
EPLD EP1K30FC
LVDS Encoder DS90C385
Local converter
Clock generator
PROM for EPLD
Control
PW/OTC Switch 4052
ST RS 232 Driver
IO Exp-SC1 PCF8574
ADC Exp PCF8591
Temp.Sensor
OTC
Main Processor SAA5801H/xx
Power ON Reset
Flash ROM 2Mbyte
DRAM 2Mbyte
NVM 32Kbit
Sync. Interrupt Gener.
service int. pins
RC5 to RCout buffer
RC5 to VGA1 buffer
Discrete electronics
VGA1 Switch 4052
UART Interrupt gener.
PDP
Vpr2
Vcc
MPU
Vs,Va
+3V3_STBY_SW
+9V_STB Y
+9V_STBY_SW
PSU
AC/DC, DC/DC converters
Audio supply, 5V,8V6, 3v3, Vs,Va
Protection
3v3,5v Standby PSU
Fan driver
VSND_NEG
VSND_POS
*
Audio processing
L/R VGA in
L/R CVBS
L/R YC
L/R HD
L/R DVI
L/R Flex VGA (only output in Basic config.)
audio enable
+9V_STBY
MSP Audio Processor MSP3415G
Audio Delay 32KSRAM CY7C1399
Audio amplifier
Per channel
HP Filter + Amp
LP Filter + Amp
Mute
Tweeter
Low/Mid
RC/LED/switch panel
IR RXr (RC in)
Light Sensor
Red LED
Green LED
ON/OFF switch (see description)
! All Functional blocks shaded grey are required for the"Basic Configuration".
The remainder is required for the "Enhanced Configuration".
* are optional or prepared
CL 26532038_007.eps
010502

Figure 9-2 Power Supply Path

The PSU consists of a pre-conditioner part and a DC/DC converter part. This converter supplies power to the PDP high voltages, the auxiliary voltages, and the audio amplifier. There is a separate standby power supply, which supplies the Main Processor, PDP microcontroller, interrupt generator and some other circuits.

The mains inlet module will host the inlet and filtering.

There is a functional "Mains on/off" switch on the LED panel. This switch is on the secondary side, controlling the relays on the primary side.

9.2 Power Supply Unit (Diagrams P)

9.2.1 Introduction

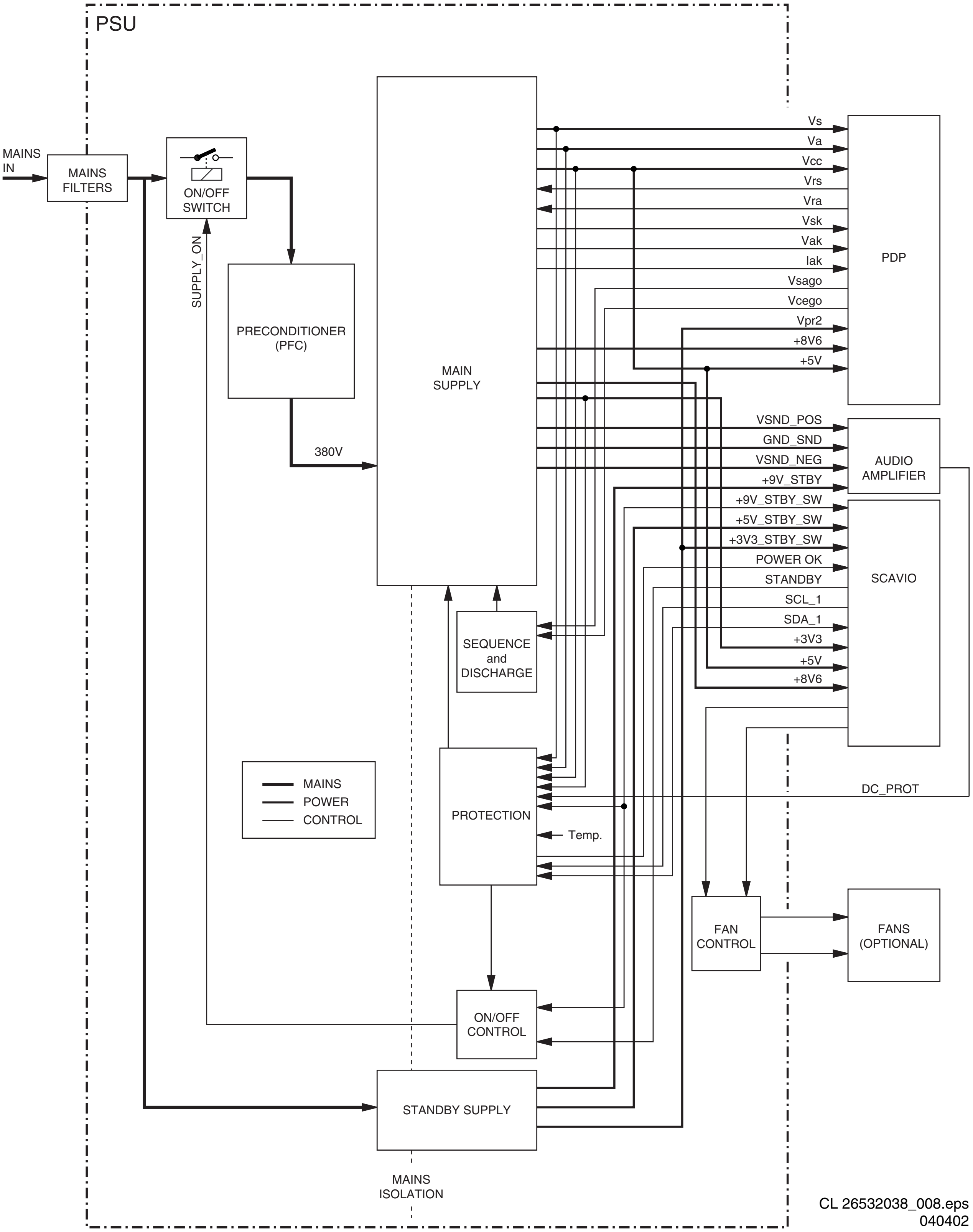

PSU
MAINS IN
MAINS FILTERS
ON/OFF SWITCH
SUPPLY_ON
PRECONDITIONER (PFC)
380V
MAIN SUPPLY
SEQUENCE and DISCHARGE
PROTECTION
Temp.
ON/OFF CONTROL
STANDBY SUPPLY
MAINS ISOLATION
MAINS
POWER
CONTROL
Vs
Va
Vcc
Vrs
Vra
Vsk
Vak
Iak
Vsago
Vcego
Vpr2
+8V6
+5V
PDP
VSND_POS
GND_SND
VSND_NEG
AUDIO AMPLIFIER
+9V_STBY
+9V_STBY_SW
+5V_STBY_SW
+3V3_STBY_SW
POWER OK
STANDBY
SCL_1
SDA_1
+3V3
+5V
+8V6
SCAVIO
DC_PROT
FAN CONTROL
FANS (OPTIONAL)
CL 26532038_008.eps
040402

Figure 9-3 Power Supply

Table 9-1 I/O Overview Power Supply

Name	I/O	Value	Description
+3V3	Out	+3.3 V_dc	To supply small signal digital circuitry.
+3V3_STBY_SW	Out	+3.3 V_dc	To supply small signal digital circuitry, needing power in standby
+5V	Out	+5 V_dc	To supply small signal digital circuitry.
+5V_STBY_SW	Out	+5 V_dc	To supply small signal digital circuitry, needing power in standby
+8V6	Out	+8.6 V_dc	To supply the small signal analogue circuitry.
+9V_STBY	Out	+9 V_dc	Signal to functional ON/OFF switch.
+9V_STBY_SW	Out	+9 V_dc	Signal from functional ON/OFF switch.
DC_PROT	In	H/L	Signal from audio amplifier to switch OFF the power supply in case of a safety problem.
FAN_SP_1	In	H/L (TTL level)	PWM signal from uP to control optional fans (group 1).
FAN_SP_2	In	H/L (TTL level)	PWM signal from uP to control optional fans (group 2). Not for FM33.
FAN_SUPPLY_1	Out	5 to 13 V_dc	Supply voltage for optional fans (group 1).
FAN_SUPPLY_2	Out	5 to 13 V_dc	Supply voltage for optional fans (group 2). Not for FM33.
I_ak	Out		Signal to measure 'I_a' in PDP (I_ak= 1 x I_a).
Mains	In	110/240 V_ac, 50/60 Hz	Mains voltage.
POWER_OK	Out	H/L (TTL level)	Signal to an interrupt pin of the uP, which indicates that the power supply is in regulation. If an error occurs, signal goes from H to L.
SCL_1	In	H/L	I2C clock line from uP.
SDA_1	In/ Out	H/L	Bi-directional I2C data line from/to uP.
STANDBY	In	H/L (TTL level)	Signal to switch the PSU to standby mode.
V_a	Out	+30 to +70 V_dc	To supply the addressing circuitry in the PDP.
V_ak	Out		Signal to measure Va in PDP (V_sk= 0.036 x V_a).
V_cc	Out	+5 V_dc	To supply small signal digital circuitry in the PDP.
V_cego	In	H/L (H= +2 V_dc)	Signal to switch the low voltage supplies ON/OFF.
V_ra	In		Signal to control Va (V_a= 30 + (20 x V_ra)).
V_rs	In		Signal to control Vs (V_s= 70 + (10 x V_rs)).
V_s	Out	+70 to +90 V_dc	To supply the sustain circuitry in the PDP.
V_sago	In	H/L (H= +2 V_dc)	Signal to switch the high voltage supplies (V_s and V_a) ON/OFF.
V_sk	Out		Signal to measure V_s in PDP (V_sk= 0.029 x V_s).
V_SND_POS	Out	+14.5 V_dc	To supply the audio amplifier panel.
V_SND_NEG	Out	-14.5 V_dc	To supply the audio amplifier panel.

The Power Supply Unit (PSU) is designed to provide regulated output voltages for the plasma display panel (PDP) and the built-in electronic panels (such as e.g. the SCAVIO and Audio Amplifier panels).
It houses the Pre-conditioner, DC/DC converters and the Standby circuitry. In addition, this panel will house the protection and the (optional) fan drive circuitry.
The mains inlet is mounted alongside the SCAVIO panel. It consists of the necessary high and low frequency mains filters.

The mains AC voltage is applied to the input filter and then fed to the standby supply. This supply is always operational and delivers the +9V_STBY voltage.
The task of the main supply is to deliver the supply voltages for the several electrical circuits in the plasma monitor.
It is switched via two single-pole relays, which are powered from the +9V_STBY voltage and controlled via the SUPPLY_ON signal.
The reason to choose for a separate standby supply instead of a single flyback supply is the requirement to have a low standby power consumption.

The PSU consists of the following parts (which are described separately):

- Mains inlet and filter.
- Standby supply.
- Fan control (optional).
- Pre-conditioner.
- LLC supply.
- Aux. supply.
- Protections.

Notes:

- To understand the descriptions below, see also the diagrams in Chapter 7.
- The descriptions are valid for the whole FM-range (FM23, FM24, and FM33). Where there are deviations, this will be highlighted per chassis.

9.2.2 Mains Inlet and Filter (Diagram P2)

Introduction

The mains filter provides common-mode and differential-mode filtering, to fulfil legal and self-imposed limits. Additional provisions are mains spikes and lightning protection.

Operation

The mains voltage is provided via mains inlet 0308, after which it is fused by a T6.3A fuse (item 1400).
The next part, the mains filter, is **optional**. It consists of an LC common mode filter section. This filter consists of two capacitors (items 2402 and 2403) from both phase and neutral to ground (to reduce the leakage current) and an inductor (5401). Interferences on one of the phases are shorted to ground via these capacitors.
Inductor 5401 also provides a differential-mode filtering with capacitor 2400. Resistor 3401 discharges this capacitor after the mains is disconnected.
A second common mode filter is made around coil 5402 and capacitor 2401. A third filter is made around coil 5404 and capacitor 2412 (*only for the FM24 and FM33*).

Resistor 3400 is a high energy VDR. The advantage of this VDR is that it can handle 400 V_ac without risk of fire. At high voltage peaks (e.g. lightning surge) on one of the phases, the

resistance of VDR 3400 will be very low, causing fuse 1400 to interrupt.
At a lightning surge on both phases with respect to chassis ground, mains filter 5401 will form a high resistance, through which the voltage will rise very sharply.
To prevent flashovers, a spark-gap/ resistor combination (items 1402 and 3404) is implemented.

9.2.3 Standby Supply (Diagram P2)

Introduction
The standby supply is a separate power supply, meant to reduce power consumption of the plasma monitor in standby mode. The standby supply operates on the AC voltage from the input filter part, and has to deliver a stable 9 V voltage.

It has three "mains isolated" outputs, and one "hot" output:
- +9V_STBY (called +9V_STBY_SW after the "on/off" switch 1101), to power the "on/off" relays in the pre-conditioner.
- +5V_STBY_SW (derived from the +9V_STBY via voltage regulator 7540)
- +3V3_STBY_SW, to supply the microprocessor of the PDP.
- 25V_HOT, to supply the LLC controller.

The standby supply is also connected to the pre-conditioner output (400V_HOT), in order to deliver a voltage as long as possible, after switch "off" and at mains dips.

Operation
The standby supply is always operational when the AC input voltage is present, so even when the POWER switch is in the "off" position. After a small rectifier (D6512/6513) and buffer capacitor (C2503), the generated DC voltage is applied to an SMPS (Switched Mode Power Supply).

The SMPS itself is build around IC7500, a "TINYSwitch" TNY256. This IC contains a control circuitry and a power MOSFET. It uses a simple "on/off" control loop to regulate the output voltage. The generated +9V_STBY voltage at the secondary side is rectified by D6504 and smoothed by C2508. The supply for the TNY256 (pin 5) comes via resistor R3506 and L5500.

By using secondary sensing, a very accurate standby voltage and high efficiency is achieved. The sensing circuit uses a TL431 as reference voltage/error amplifier. Optocoupler 7501 is used for the mains isolation.
When the output voltage rises, the reference voltage on the TL431 will exceed 2.5 V and the current through this device and the optocoupler LED will increase. By this, the optocoupler transistor will conduct more. When this current (at pin 4 of IC7500) exceeds 50 A, the MOSFET is switched "off", and the output voltage will drop. When this current drops below 40 A, the MOSFET is switched "on" again.

During the time that the MOSFET is "on", the IC has no supply voltage. To overcome this period, the energy stored in the bypass capacitor C2513 is used. This capacitor is charged during the time the MOSFET is "on".

As the TNY256 is sensitive for transients (mains spikes), a "peak clamp" circuit (300 V zenerdiodes 6501 and 6502) is used to limit the voltage to a safe level.

9.2.4 Fan Control (Optional, Diagram P4)

For ceiling mount or portrait-mode use, there is foreseen in four (two for the FM33) **optional** fans. The temperature within the monitor is measured via a sensor (R3372, KTY81) on the PSU. This sensor is, via A/D converter (item 7530 on the SCAVIO), connected to the OTC. According the temperature within the cabinet, the OTC-software will drive the PWM output of the OTC. The output (FAN_SP_x) is connected to the PSU, where a corresponding voltage is generated to supply the fans. This FAN_SUPPLY_x voltage is proportional to the duty cycle of the corresponding PWM signal.
The OTC senses the temperature every five s. If it has reached the alarm temperature, and this value has been measured three times consequently, the monitor will go into protection and a error-code is generated.

9.2.5 Pre-conditioner (Diagram P5)

Warning: the pre-conditioner does **not** provide mains isolation.

Introduction
The European Law describes a reduction of mains harmonics for apparatus with a power consumption above 75 W. Therefore the pre-conditioner is designed. This module serves as the interface between the mains input and the V_s/V_a supply.
The advantage of a pre-conditioner is (compared to a mains input filter):
- Reduction of mains harmonics to legal limits.
- Lower mains current for the same output power.
- Power factor close to 1.
- Stable regulated output.
- Small and low weight.

The input voltage of the pre-conditioner is universal, between 95 and 264 V_ac. The output is 400 V_dc (400V_HOT) with a maximum output power of 300 W (FM23) or 400 W (*FM24 and FM33*). This output voltage is delivered to the V_s supply.

Operation

Start-up
The two relays (1450 and 1460, diagram P2) are controlled via the SUPPLY_ON signal. This signal will become "high" when the +9V_STBY_SW, the STANDBY (from the OTC), and the LATCH signal are "ok". It then switches indirect relay 1450 via transistor 7460 and so enables the use of a small, low voltage, switch.
To protect rectifier 6600 and relay 1450, the inrush current is limited to a maximum of 20 A by charging the capacitor 2605 through a PTC (items 3450 and 3451) and an NTC (items 3452 and/or 3453).
After approximately 0.5 sec, relay 1460 is activated. This relay will short the PTCs. The advantage of using an NTC, is the fact that the resistance varies with the current and hence the mains voltage. At a high mains voltage, the current is lower for the same power.

Two clamp diodes 6605 and 6606, charge output capacitor C2616 to the peak voltage of the mains input. During normal operation, both diodes are blocked because of the output voltage of 400 V_dc, and will only conduct if there is a mains spike or an output dip.

Capacitor 2616 then delivers, via R3668, the start-up voltage at pin 16 of IC7650. After the start-up cycle, IC7650 is supplied via auxiliary winding 1-2. Capacitor C2663 is charged during the cycle that MOSFET 7610 conducts. While MOSFET 7610 is switched "off", this capacitor transfers its energy via D6661 to:
- The input of stabiliser IC7660 (*for FM23 and FM24*).
- The input of DC-DC converter IC7661 (*for FM33*). This circuit was changed for a better efficiency.

The output voltage of this IC is fed via D6665 to V_cc pin 12 of IC7650.The slow start function is realised by the circuit consisting of transistor 7654, D6654, R3654, and C2654.

Normal Operation
An up-converter circuit is used for the pre-conditioner. The switching frequency of the converter is chosen much higher than the mains frequency. It is therefore possible to consider the supply as constant, during every high frequency period,

and the envelope of all voltage steps during the low frequency period approximates a half sine wave.
The output voltage of the pre-conditioner equals the input voltage, when the MOSFET is continuous switched "off", and increases while the MOSFET is switched "on".

The rectified mains input voltage is connected to pin 5 of IC7650 via voltage divider R3603/04/05 and R3651. This voltage is proportional with the mains input, and is used to change the duty cycle of the pulses, which are generated at pin 11. Because the width of these pulses is not small enough, the circuit around transistors 7640 and 7641 is added. It decreases the duration of the square wave by 500 ns (this value is set by R3640 and C2640).
A demagnetisation winding (pin 1-2 of L5600) detects when there is no energy in the transformer. This information is fed to IC7650 pin 7 and this is used to switch "on" the MOSFET (7610). In this way, the dissipation is very low, combined with a low EMI.
The MOSFET 7610 is switched "off" at high currents, up to 15 A. To reduce dissipation, this is done at high speed for which "turn off driver" T7608 is used.

The output voltage (400 V) is divided by R3680/81/82 and R3671 and connected to pin 3 of IC7650. A change in the load will adjust the duty cycle of the gate pulse at pin 11, in order to keep the output voltage constant. Therefore, there is no need to adjust the output voltage by means of a potentiometer.

Protections

Current Protection
The current through FET 7610 flows also through the sense resistors 3614 and 3615. The voltage across these resistors is fed to pin 6 of IC7650. If the current exceeds its reference level, the pre-conditioner will switch "off". A filter, formed by C2666 and R3666, avoids unnecessary protection triggering due to spikes.
C2665 and R3665 on pin 13 determine the maximum oscillating frequency.

9.2.6 LLC Supply (Diagram P6)

Introduction

The V_s supply (70-90V) is based upon the so-called LLC converter technology (also used in the MG3.1 and FTV1.9). It is used to supply the power of the sustain pulses, which generate the light in the PDP. The voltage is set by a reference DC voltage (V_rs), coming from the PDP.
The V_a voltage (derived from V_s) is used to supply the power for driving the addressing electrodes of the PDP. The value of V_a is also depending on a reference voltage (V_ra) coming from the PDP.

The main supply hosts the following supplies:
- V_s supply, via an LLC converter.
- V_a supply, derived from V_s via a down converter.
- V_cc, via a flyback converter.
- 3V3, via a down converter.
- Audio amplifier supplies (V_SND_POS and V_SND_NEG), via a transformer.

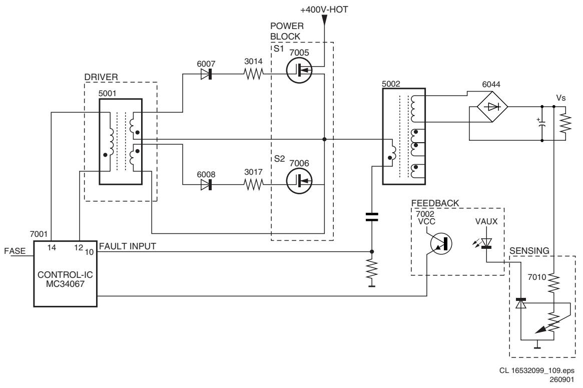


Figure 9-4 V_s supply

The start-up voltage for the IC is derived from one phase, the IC starts to oscillate, and alternately S1 and S2 are driven into conduction with a dead time in between. This effects that, via the resonance circuit and the MOSFETS, energy is stored into transformer L5002 (and L5004 for *FM24* and FM33).
The secondary voltages are rectified and smoothed, these voltages are, via a voltage divider, fed to the optocoupler that influences the oscillator frequency of the control IC and stabilises the secondary voltages. If the current becomes too high, the supply is switched "off" via the fault input of the control IC.

Advantages:
- High efficiency (more then 90%, other supplies 75%).
- Less radiation.
- Cost effective (two MOSFETS of 400 V cost less than one MOSFET of 600 V).

Disadvantages:
- Very low power stand-by impossible.
- Realisation and stabilisation is more complex.

Operation V_s Supply

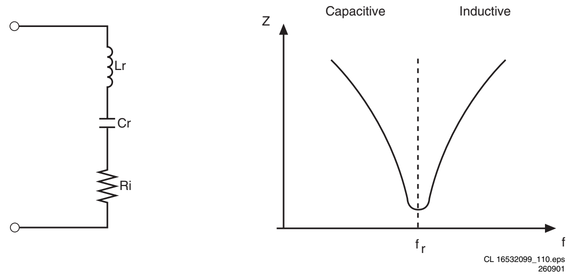


Figure 9-5 Impedance characteristic

General
The LLC supply is a serial resonance power supply. The coil, resistor, and capacitor form a trap at the resonance frequency f_r. The impedance is frequency dependent. The smallest impedance is at the resonance frequency (f_r), at the right side of f_r is the inductive part, and at the left side the capacitive part. The supply works in the inductive part, since higher frequencies causes minor losses.
Stabilisation is realised, by regulating the frequency as function of the output voltage (V_S_UNSW) and power. The load is stabilised by influencing the series-loop. The higher the frequency, the lower the output power.

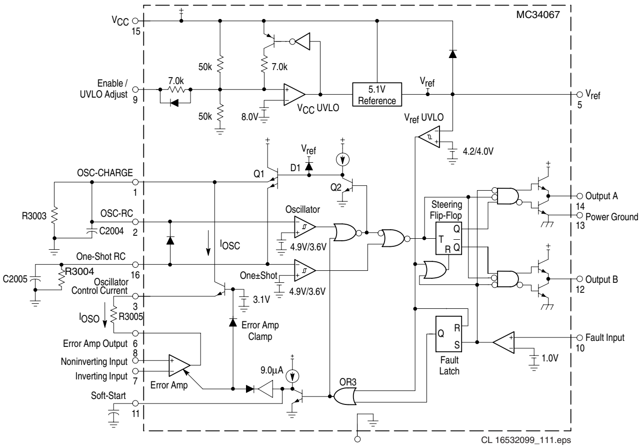
The supply voltage of the control IC comes from the 25V_HOT voltage of the standby supply (via stabiliser 7093), and is lead to pin 15 of the IC. The IC starts to oscillate. This supply line has a short-circuit protection via opto-coupler 7003; when the supply is regulating, the current through the opto-coupler is amplified and will deliver power to the IC.

Control is done in the usual way by a TL431 at the secondary side. Voltage V_rs, a control signal coming from the display, is mixed into the feedback voltage, using an additional TL431 (7011 at schematic P6). It influences the output of the V_s supply. The output voltage of the V_s supply varies according the following formula: V_s = 70 + (10 * V_rs). Via this stabilisation circuitry for V_s, the output voltage is stabilised. If necessary, it is possible to adjust the voltage via potmeter R3026 (not for FM33).
The V_s is fed via a voltage divider to IC7010 (TL431). If the voltage at pin 3 of IC7010 is higher than 2.5 V, a current will flow from cathode to anode. This current also flows through the secondary side of the optocoupler 7002. The voltage at pin 7 of the MC34067, determines the output frequency. The higher this voltage, the higher the output frequency. Thus, if the voltage on pin 7 increases, the frequency increases and V_s decreases.
When the output voltage rises, the voltage at the reference IC7010 also rises, this causes the current through the diode of the opto-coupler to rise. The transistor of the opto-coupler conducts more, because of which the voltage at pin 7 of the MC34067 increases.

Accurate Over Voltage Protection (OVP) is added, using a TL431 (7304, diagram P3) as reference/comparator and an additional optocoupler (7003) that acts on the fault input pin 10 of the MC34067P (see also "Power Supply Protections ").

The Controller
The MC34067P controller, is used for the following reasons:

- Zero voltage switching.
- Variable frequency oscillator (above 1 MHz).
- Precision one-shot timer for the dead time.
- 5 V reference output.
- Double, high current totem-pole output.
- Soft start.
- Wideband error amplifier.
- Fault input (protection).



CL 16532099_111.eps
260901

Figure 9-6 MC34067

The oscillator circuit is build around an internal comparator with two threshold-voltages: 4.9 and 3.6 V.
C2004 is first charged via transistor Q1. If the voltage across C2004 is more then 4.9 V, the output of the upper comparator becomes low, the NOR-port output will be high, and Q1 will be blocked because the base will be shortened by Q2. C2004 will be discharged via the resistors R3003 and the oscillator control current (I_osc).
If the voltage across C2004 is below the lower threshold (3.6 V), transistor Q1 is conducting and the capacitor is charged again. The oscillation frequency is modulated by the oscillator control current.
The discharge current increases, when pin 3 is loaded even more; thus the lower the voltage on pin 3, the higher the oscillator control current and the higher the frequency. The maximum frequency is reached when the output of the error amp is minimal (0.1 V). Thus, R3005 determines the maximum frequency.
The minimum frequency is reached, when I_osc current is zero: C2004 then discharges only via the resistor R3003.

One Shot Timer
The one-shot timer is present, to de-activate both outputs simultaneously, and to provide a dead time, so that only one output will be activated.
The one-shot capacitor (C2005) is first charged by Q1. The one-shot period begins when the oscillator comparator is switched "off" by Q1. The one-shot capacitor is discharged via the parallel resistance (R3004): if this voltage gets lower than the lower threshold of 3.6 V, the comparator will be high and controls the flip-flop, which makes one of both outputs high.
If Q1 is re-conducted through the oscillator comparator, the one-shot capacitor is re-charged.

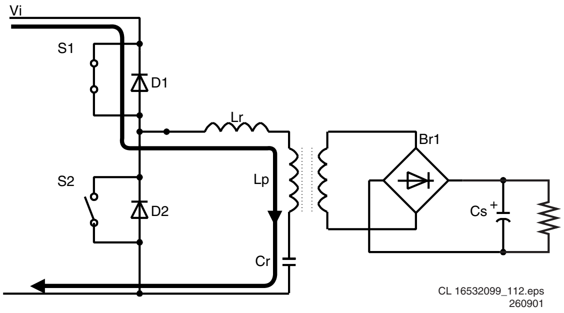
Fault Detector Input
At pin 10, there is a fault detector input. If this voltage reaches 1 V, the output of the OpAmp goes high, and both drive outputs are switched "off".
In addition, the output of OR3 will be high via the "fault latch". The output of OR3 drives Q1, so both the oscillator and the one-shot-capacitor remain charged. Via OR3, the soft-start capacitor is discharged.

Soft-start
Due to the soft-start circuit, the oscillator starts with maximum frequency. The low voltage on the soft-start capacitor (C2027) is buffered and keeps the error amplifier output low (if I_osc = max then f_osc = max).
The capacitor is charged with a current of 9 uA, the output of the buffer gets high, and the error amplifier input takes charge of the oscillator control current.

Driver stage
The two secondary windings of the driver transformer control the two switching MOSFETs. The primary winding of the driver transformer is alternately controlled by the two totem-pole outputs of the controller. Cross-conduction of both MOSFETs is prevented by the dead time.
The gate of each MOSFET is controlled via diodes 6007/6008 and resistors 3014/3017.
The transistors 7007/7008 discharge the gate faster by switching "off" situations.
The diodes 6017/6028 at the base-emitter of 7007/7008 prevent the zener effect of these transistors.
The zener diodes at the gate-source of 7005/7006 are for ESD protection.
C2011 and C2014, form the capacity for the series resonant circuit.

MOSFET switching
The total switching time can be distributed over 12 phases with different current paths. Only four phases are discussed to simplify the explanation:

Phase 1 (S1 closed, S2 open)

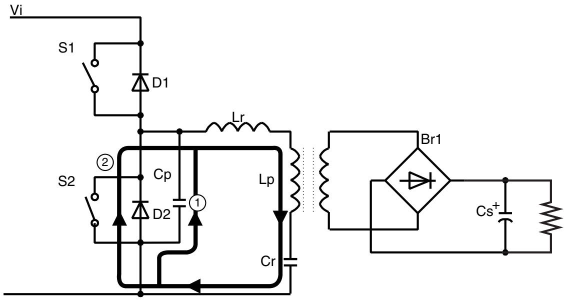


CL 16532099_112.eps
260901

Figure 9-7 Phase 1 Resonance Supply

The gate of MOSFET 1 is positive, which causes S1 to close. The input voltage Vi of 400 V_dc provides a current flow through S1 and the series circuit. At the same time, a current flows through the rectifier diodes in the secondary winding, which will charge capacitor Cs.
The current through Lr starts negative, but it is increasing to change polarity.
Capacitor Cr is charged sinusoidal, while the voltage at Lr drops. This makes the current drop.

Phase 2 (S1 open, S2 open = dead time)

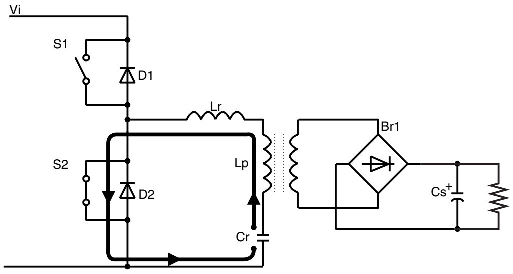


CL 96532069_168.eps
300999

Figure 9-8 Phase 2 Resonance Supply

Before the current reaches zero, S1 is opened. Now, both MOSFETs are not conducting. However, the current through the coils wants to continue. The capacity Cp releases its load to the series circuit, and the voltage at Cr continues to rise (Cp is the sum of several parasitic capacitives).
1) The voltage at the drain of MOSFET 2 drops, because Cp is discharged at this moment [1]. This causes a voltage inversion across Lr and Lp. The secondary winding begins to feed back, charging capacitor Cs.
2) The voltage becomes negative, and diode D2 starts to conduct [2]. The secondary bridge remains conducting.

Phase 3 (S1 open, S2 closed)

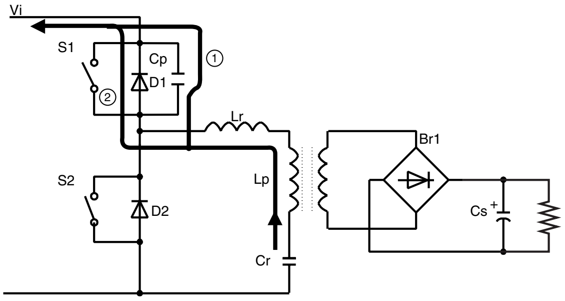


CL 96532069_169.eps
300999

Figure 9-9 Phase 3 Resonance Supply

The gate of MOSFET 2 is becoming high. The current through D2 is taken over by MOSFET 2. The switching losses are negligible, because the voltage across the switch is now approximately 1 V.
The current through Lr starts negative, but is increasing to change polarity. A current flows through MOSFET 2 and the series circuit. The bridge remains conducting, but its current gets zero because of the decreasing voltage across Lp. This is caused by the discharge of capacitor Cr. The voltage at capacitor Cr is decreasing sinusoidal and so is the voltage across Lp and Lr.

Phase 4 (S1 open, S2 open = dead time)



CL 96532069_170.eps
300999

Figure 9-10 Phase 4 Resonance Supply

Before the current reaches zero, S2 is opened. Now, both MOSFETs are not conducting, but the current through the coils wants to continue. The capacity Cp releases its load to the series circuit, and the voltage at Cr continues to fall (Cp is the sum of several parasitic capacities).
1) The voltage at the drain of MOSFET 2 increases, because Cp is discharged at this moment [1] (Cp was charged to 400 V). This causes a voltage inversion across Lr and Lp. The secondary winding begins to feed back, charging capacitor Cs.
2) The voltage becomes higher than 400 V, and diode D1 starts to conduct [2]. The secondary bridge remains conducting.

Protections MC34067

Over Current Protection (OCP)
The voltage at R3021 is a criterion for the current, which flows through the primary winding. Via C2015 and D6010, the negative information is clamped at -0.6 V. The total amplitude is rectified via D6009 and C2010, and via R3020 and TS7009 supplied to the fault input (pin 10) of the controller.
When the fault input is higher than 1 V, the protection is activated.

Over Voltage Protection (OVP)
The voltage at R3010 is the take-over-winding voltage. This voltage is also supplied to pin 10 of the controller via a voltage divider R3010/R3011 When the fault input is higher than 1 V, the protection is activated.

Soft-start Over Current Protection
If short-term over current peaks occur, the frequency is adapted. The voltage at R3021 is clamped at -0.6 V via C2015 and D6010. The total amplitude is rectified via D6011 and C2008, and supplied to the "thyristor" TS7017/18 via R3012. When the voltage at the emitter of TS7017 gets higher than 5 V, the soft-start capacitor C2027 is discharged and the frequency increases. Because of this, the V_s will drop. If this voltage remains 5 V, the supply is interrupted (hick-up).
This circuit is adjusted in such a way, that the voltage does not drop too much if a flash occurs.

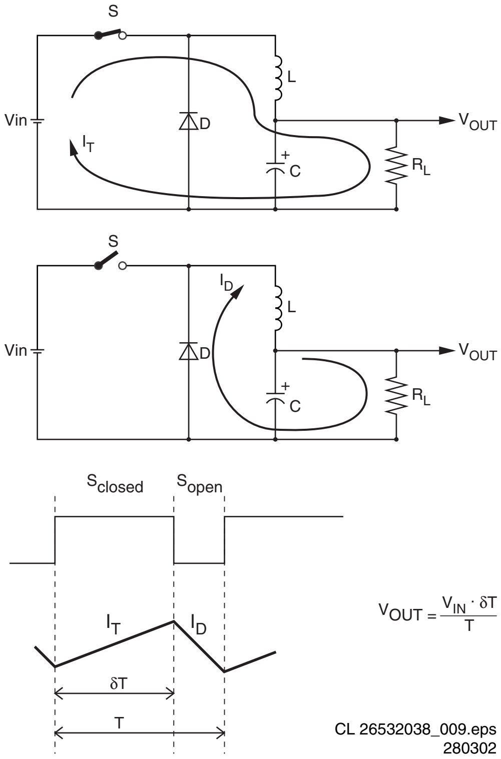
9.2.7 Aux. Supply (Diagram P7)

The "Aux. Supply" part hosts the supplies that are derived from the V_s supply:

- V_a supply.
- V_cc supply.
- 3V3 supply.
- Audio supply (V_SND_POS and V_SND_NEG).

Note:
In the FM24 monitor, a circuit is added (around 7143, 7144, and 7145), which takes care that the V_a and V_s supplies are discharged immediately after set switch "off". This to prevent discharge spikes of the elcaps. The circuit will ground the supply voltage of IC7112 as soon as its trigger line (+9V_STBY_SW) is switched "off".

V_a Supply
The V_a voltage is derived from the V_s voltage via the "down converter" principle. Control IC TEA1507 (item IC7112) and MOSFET TS7117 are used.



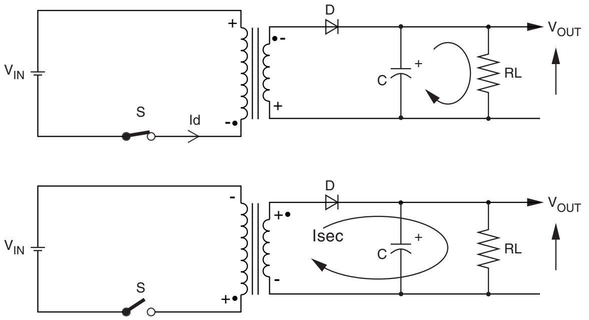
CL 26532038_009.eps
280302

Figure 9-11 Principle of Down Converter

After closing switch "S", the linear in time increasing current I_T will charge capacitor C.
Opening switch "S" will generate a counter-e.m.f. (= reverse voltage) in coil L, trying to maintain current I_T. This is possible via diode D (this diode is also called "freewheel diode").
Therefore, after opening "S", the magnetic energy stored in coil L will be transferred to electrostatic energy in capacitor C. The V_in will only supply current during the time that "S" is closed while a constant current is flowing through R_L.
V_out is directly proportional with V_in and the time that "S" is closed, and reverse proportional with period time "T".
Therefore, by changing the duty cycle, it will be possible to control V_out.
To apply this on this chassis (diagram P7): replace switch "S" by FET TS7117, coil L by L5120 (or L5121 for the FM33), diode D by D6120, C by C2121, V_in= 77-100V, and V_out= V_a.

Stabilising is done in the same way as for the V_s supply. Voltage V_ra , coming from the display, is mixed into the feedback voltage using an additional TL431 (item 7130). This influences the output of the V_a supply. The output voltage of the V_a supply varies according the following formula: V_a = 30 + (20 * V_ra).

V_cc Supply
This part delivers, besides the V_cc voltage, also +12V (+10V for the FM33) for the optional fan control and, derived from this voltage, an +8V6 (for small signal analogue circuitry).
The V_cc voltage is derived from the V_s voltage via the flyback converter principle. Control IC TEA1507 (item 7212) and MOSFET 7217 are used.



CL 26532039_010.eps
280302

Figure 9-12 Principle of Flyback Converter

After closing switch "S", the current I_D will increase linear in time. The magnetic energy in the primary coil is directly proportional with the self-inductance of the coil and current I_D (thus with the time the switch is closed).
The voltage polarity at the secondary winding is negative (due to different winding direction), meaning that diode D will block. Capacitor C will discharge via R_L, and V_out will decrease.
Opening switch "S" will generate a counter-e.m.f. in the primary winding, trying to maintain current I_D. Through this the polarity of the secondary voltage will inverse. The magnetic energy, stored in the coil, will now be transformed to the secondary side. Diode D will now conduct, capacitor C will be charged and V_out will increase.
To apply this on this chassis (diagram P7): replace switch "S" by FET TS7217, coil L by L5220, diode D by D6224, C by C2224, V_in= V_S_UNSW, and V_out= V_cc.

Note: While in the *FM23 and FM24* the +12V is derived via the flyback converter principle, in the FM33 this is done via a voltage doubler circuit.
The negative side of C2229 has an average voltage level of 0 V as it is connected to the secondary side of L5220. Its positive side is connected to the +5V (V_cc). When diode D6225 conducts, there will be +5.5 V on its anode (+5 V plus the forward voltage). This means that there will be +10.5 V at the positive side of C2229. The resulting voltage over C2230 will be +10 V (+10.5 V minus the diode forward voltage of D6230).

3V3 Supply
The +3.3 V is generated to supply the SCAVIO panel. This voltage, is directly derived from the LLC supply (diagram P6):

- FM23: Via a fuse (1005/1045), this voltage is rectified by diodes 6021/6045 and smoothed by C2022 (+18V line). Via control IC L4973V (item 7260, diagram P7), the 3V3 voltage is generated. This IC contains a complete down converter, with integrated MOSFET.
- FM24: Via a fuse (1005/1045), this voltage is rectified by diodes 6021/6045 and smoothed by C2022 (+15V line). Via control IC L4973V (item 7260, diagram P7), the 3V3 voltage is generated. This IC contains a complete down converter, with integrated MOSFET.
- FM33: Via a fuse (1082/1083), this voltage is rectified by diodes 6021/6045 and smoothed by C2022 (+9V line). Via control IC L6910 (item 7260, diagram P7), the 3V3 voltage is generated. This IC contains a complete down converter, with integrated MOSFET. This IC has a better efficiency

compared to the L4973V that is used in the *FM23 and FM24*.

All these circuits use double diodes per voltage, in order create a symmetrical load for the transformer.

Audio Supply

This is a "floating" symmetrical supply (±14.5 V) derived from V_s via transformer 5290. Because this voltage is tightly coupled to the V_s voltage, this voltage varies considerable, between 11 V (max. load, V_s = 70 V) and 20 V (min. load, V_s = 90 V).

The Audio ground is connected to the normal secondary ground, with a capacitor (C2290) and a resistor (R3292) in parallel, in order to suppress spurious oscillations.

9.2.8 Power Supply Protections (Diagram P3)

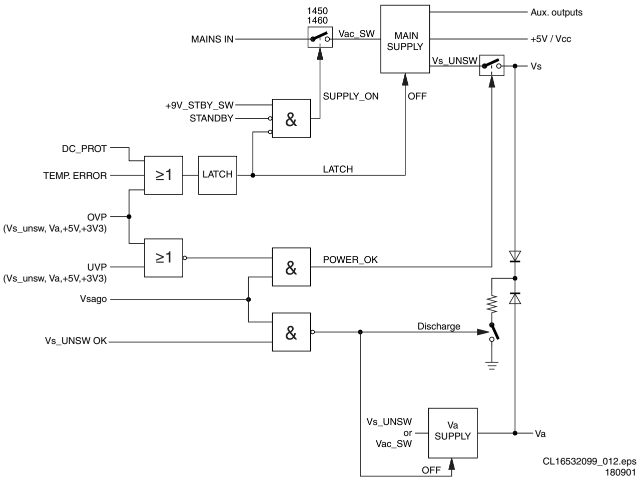


Figure 9-13 Protections

In general, all efforts are taken, to make a safe power supply. Therefore, all major outputs are monitored with respect to over- and/or under voltage. All protections are handled by hardware. The software only monitors the hardware to generate error codes for service.

Via I2C, errors of the power supply are transmitted to the microprocessor on the SCAVIO panel. If an error occurs, the POWER_OK line will change from "high" to "low". The errors are transmitted to the microprocessor, on the following ports and pin numbers of the I/O expander PCF8574AT (item 7370):

Table 9-2 IC7370 Inputs

Pin	Name	Description
4	V_s	Detection of under- or overvoltage on V_s
5	V_a	Detection of under- or overvoltage on V_a
6	+5V	Detection of under- or overvoltage on +5V
7	+3V3	Detection of under- or overvoltage on +3V3
9	OVP	Detection of overvoltage on V_s, V_a, +5V or +3V3
10	Switch	Detection of functional switch
11	DC_PROT	Detection of DC_PROT going high
12	TEMP	Detection of over temp. inside power supply

This POWER_OK signal is connected to an interrupt pin of the OTC, in order to be read as fast as possible. This is very important in case of a time-limited error like over-voltage. After detection of the error, the control system will log the error in NVM, and transmit the first occurrence back to the power supply through the I2C bus.

Note: The POK signal is fed to buffer 7366, together with the "8V6_UNDER_VOLTAGE" and "SWITCH" sensing. The output of this buffer, the POWER_OK line, will follow the inputs.

Operation

V_s Protection

Detection of over- or under voltage on V_S_UNSW by comparators IC7308-A and -B. If this voltage exceeds certain levels (set via voltage dividers), the protection will activate the Power OK (POK, active "low"), which will shut down the set.

V_a Protection

Detection of over- or under voltage on V_a by comparators IC7308-C and -D. If this voltage exceeds certain levels (set via voltage dividers), the protection will activate the Power OK (POK, active "low"), which will shut down the set.

V_cc Protection

Detection of over- or under voltage on V_cc (+5 V) by comparators IC7330-A and -B. If this voltage exceeds certain levels (set via voltage dividers), the protection will activate the Power OK (POK, active "low"), which will shut down the set.

+3V3 Protection

Detection of over- or under voltage on the +3V3 voltage by comparators IC7330-C and -D. If this voltage exceeds certain levels (set via voltage dividers), the protection will activate the Power OK (POK, active "low"), which will shut down the set.

OVP protection

This line detects, if one of the above mentioned voltage protections is an over-voltage protection. Therefore, this works in combination with the above-mentioned under/over voltage protections.

Latch Protection

When an OVP-, DC-, or Temperature protection occurs, thyristor 6348 is fired and the LATCH signal is made "low". This signal will switch "off" the main supply and prevents that the supply is switched "on" again, as long as the protection is active.

In addition, the V_cego signal can activate the LATCH signal (via TS7352 and 7348), but this is temporarily. This is done for correct start-up behaviour.

DC Protection

Detection of a DC voltage on the audio amplifier outputs. If a DC voltage is detected, TS7362 will activate the Power OK (POK, active "low"), which will shut down the set.

Temperature Protection

- *FM23 and FM24*: Detection of the temperature (via PTC 3368) in the power supply by comparator IC7366-A. If this voltage exceeds a certain level (set via voltage dividers), the protection will activate the Power OK (POK), which will shut down the set.
- *FM33:* via an I2C temp sensor IC7372. This LM75A is a temperature-to-digital converter using an on-chip temperature sensor, and provides an Over-temp Shutdown (OS) output. It communicates via I2C. The device is powered-up in normal operation mode with the OS in comparator mode, temperature threshold of 80 °C and hysteresis of 75 °C, so that it can be used as a stand-alone thermostat with those pre-defined temperature set points.

9.3 VGA Connector Panel (Diagram VGA)

The Video Graphics Array (VGA) panel serves as an interface between the peripheral VGA equipment (Receiver box, PC, etc.) and the SCAVIO panel. Some specifications of this panel:

- Two NVMs are present, which hold identification data for the DDC line.
- Further, there are buffers present for the incoming and outgoing sync signals.
- RC_OUT cinch for linking with other equipment.
- Provision to terminate the incoming sync lines with 75 Ohm via the EBOX_PRESENT line.

For a description, see the next "SCAVIO" chapter.

9.4 SCAVIO Panel (Diagrams SC)

The Scaler Control Audio Video Input Output (SCAVIO) panel contains:

- All the input connectors,
- Analogue and digital video processing,
- Scaler (co-processor)
- Interface to the PDP,
- Audio processing (excluding the audio amplifier),
- OTC (main processor), and
- RS232C in/out.

Note: There are two versions of this panel, a *Basic* and an *Enhanced* version. Therefore, many components are not mounted for the *Basic* version.

For the circuit description, we divide the board into the following parts:

1. Supply
2. Video processing
3. Audio processing
4. Control

9.4.1 Supply

See figure "Power Supply Path" in paragraph "Power Supply 9.1.5".

9.4.2 Video Processing (Diagrams SC3, 4, 5, 6, 10, 11 and 12)

Introduction

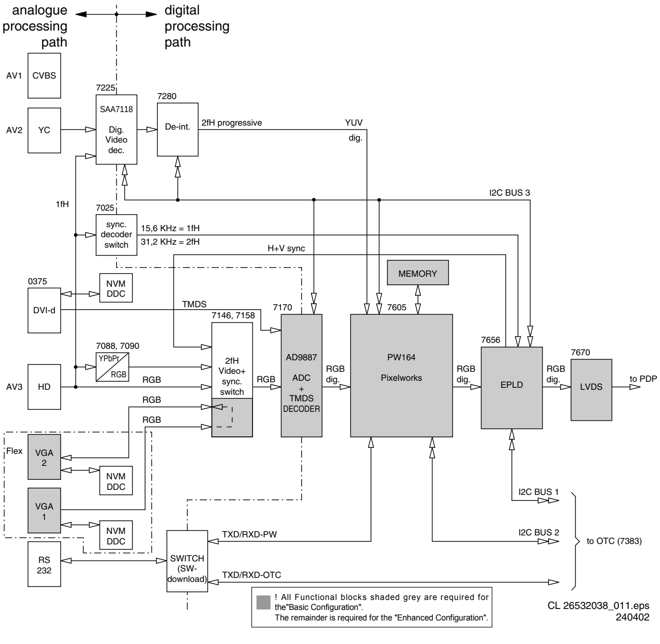

analogue processing path
digital processing path
AV1
CVBS
AV2
YC
7225
SAA7118
Dig. Video dec.
7280
De-int.
2fH progressive
YUV dig.
1fH
I2C BUS 3
7025
sync. decoder switch
15,6 KHz = 1fH
31,2 KHz = 2fH
H+V sync
0375
NVM DDC
DVI-d
MEMORY
TMDS
7146, 7158
7170
7605
7656
7670
7088, 7090
YPbPr
RGB
AV3
HD
RGB
2fH Video+ sync. switch
RGB
AD9887
ADC + TMDS DECODER
RGB dig.
PW164
Pixelworks
RGB dig.
EPLD
RGB dig.
LVDS
to PDP
RGB
RGB
Flex
VGA 2
NVM DDC
VGA 1
NVM DDC
I2C BUS 1
I2C BUS 2
to OTC (7383)
RS 232
SWITCH (SW-download)
TXD/RXD-PW
TXD/RXD-OTC
! All Functional blocks shaded grey are required for the"Basic Configuration".
The remainder is required for the "Enhanced Configuration".
CL 26532038_011.eps
240402

Figure 9-14 Video path

This mainly consists of a small analogue processing part and a bigger digital signal processing part.
The video inputs like CVBS, YC, High Definition RGB, or YUV (1fH and 2fH), VGA, and DVI-D are received and processed.
The YPbPr (2fH) is discretely converted to RGB, whereas the YCbCr (1fH) is processed in the SAA7118 Digital Video decoder. The base-band video inputs (CVBS and YC) are output from the digital video decoder as digital YUV, which are then further processed by the Pixel Works Scaler.
The VGA signals are first AD converted and then processed by the PW Scaler.
The digital input on the DVI is first decoded by the TMDS decoder inside the AD9887 and then processed by the PW Scaler.
The PW Scaler output is going through an EPLD and then via the LVDS transmitter to the PDP (Plasma Display Panel) as differential serial data. The PDP is based on ALiS (Alternate Lighting of Surface) technology and is an interlaced display, with separate ODD and EVEN fields to be displayed.

Analogue Video

This part describes the analogue video and synchronisation path of all inputs, until it reaches the "analogue digital converters" of either the AD9887 (ADC+TMDS Decoder) or the SAA7118E (Digital Video Decoder).
In addition, the switching part is described and the necessary control signals.
In principle, all video control functions are done by the Pixel Works processor.

Note: This part also includes the VGA connector panel that is mounted on top of the SCAVIO panel.

Inputs

There are five video inputs, which are divided in three types:

- **VGA** (2fH): named VGA1 and VGA2. Both are 15-pole SUB-D connectors for RGB and HV, and are situated on the VGA connector panel. For automatic identification by a PC, each VGA input is foreseen with a DDC NVM IC. VGA2 is set default as loop through of VGA1. In the *Enhanced* version, VGA2 can be switched as output, via the control signals VGA2_OUT and VGA2_EN.
- **YPbPr/RGB** (combined 2fH and 1fH): named AV3 and suitable for YCbCr/HD-YPbPr/HD-RGB + HV. These are cinch inputs. YPbPr and RGB are seen as separate inputs by the HW and must be properly selected by SW.
- **CVBS** like (1fH): named AV1 for CVBS and AV2 for Y/C. These are also cinch inputs.

Video Path

The 1fH signals (including YPbPr) are buffered (item 7113/21/17) and go directly to a digital video processor, the SAA7118E (item 7225 on diagram SC5), where they are converted into a digital signal.

The 2fH signals are also buffered; both YPbPr (item 7074/84/79) and RGB (item 7141/38/35) buffers get the same input signals.
When YPbPr signals are connected, the correct input must be selected, to get a picture with proper colours. Thus, the signals must pass a video matrix (item 7088/90, see diagram SC3), where they are converted into RGB. There are two matrices, an NTSC and an ATSC. With the MATRIX_SEL signal, the correct matrix is chosen (item 7089). The detection is done automatic, by an algorithm in the EPLD.
After the matrix, the signals enter a clamp/blanking circuit (7102/03/04 and 7100), for the removal of the residual sync signals. The control is done via the lines HD_BLANKN and HD_CLAMPN coming from the EPLD.

All RGB signals come together at 4-pole switches (item 7146/58), one for each colour, where they are switched to the AD converter item 7170 (R_ADC, G_ADC and B_ADC).

Sync Path
All incoming H and V sync signals go to a 4-pole switch (item 7009) where SYNC_SEL and VIDEO_SEL_2 determine, which signal is available on the ADC.
Before this switch, the VGA sync path is rather straight, only 1 switch (item 7007) is added for the VGA2 sync signals, which determines if VGA2 sync is input or output (VGA2_OUT).
In the *Basic* configuration, these switches are omitted, and replaced by jumpers (4009/4010).

The external sync (AV1 - 3) signals are treated differently. Both H_HD_EXT and V_HD_EXT go to three circuits:

- A comparator circuitry with an LM319 (item 7025), to ensure both sync pulses are always positive going (H and V_SYNC_CMP),
- A level detection circuitry (items 7000 to 7002), to detect if the sync is of TTL level (H and V_SYNC_TTL),
- A positive/negative going detection circuitry (items 7006 to 7010), to indicate the polarity of the sync in case of TTL level (H and V_SYNC_POL_N).

All above-mentioned signals go to the EPLD (see diagram SC11) for further processing.

Processed sync signals H_HD and V_HD coming from the EPLD, are also switched to the ADC (H_ADC and V_ADC) along with the proper RGB signals (R_ADC, G_ADC and B_ADC).

Digital Video

This part describes the digital video path on the SCAVIO panel, starting at the AD converters in either the AD9887 (item 7170) or in the SAA7118E (item 7225) and ending at the output for the PDP.
For both the *Basic* as the *Enhanced* version, everything "after" the Pixel Works chip, is equal.
For the *Basic* version, the input for the Pixel Works only consists of the "Graphics path".
For the *Enhanced* version, it is both the "Graphics path" as the "Video path".

The SCAVIO panel contains the following functions in the video path:

1. The "YPbPr to RGB matrix" and "2fH Video+Sync Switch" are explained above in the "Analogue Video" part.
2. The "Digital Video" path containing the Digital Video Decoder and the De-interlacer.
3. The "Digital Graphics" path containing the ADC+TMDS decoder.
4. The "Scaler" which is the Pixel Works (PW164-10R) plus Memory.
5. The "EPLD" for sync decoding and video manipulation.
6. The "LVDS" encoder.

The Digital "Graphics Path"
This is a straightforward application of the Analogue Devices AD9887 (item 7170). Inputs for this device are:

- FTV Receiver box,
- VGA formats (up to SXGA at 75 Hz),
- 2fH RGB+HV (only in *Enhanced* version),
- 2fH YPbPr, which is converted to RGB by the "YUV to RGB" matrix (only in *Enhanced* version),
- DVI-d (only in *Enhanced* version).

Analogue input: The AD9887 is meant to sample "pixel synchronous". To achieve this, a (software) driver is running on the Pixel Works processor (PW). After hooking up a source to the AD9887, the PW starts counting the number of lines per field and calculates the H-period time. With these two values, it determines the exact match or the closest match out of a look-up-table (LUT) with VGA standards. When the correct standard is determined, the PW will set the AD9887 I2C registers to the correct value. The AD9887 should now sample with exact the same frequency as the incoming standard requires. This is done to get an optimal picture performance.
It also is a "must" when a computer graphics card is connected, because there is no, or very little, post anti-aliasing filtering done on such cards. Therefore, the outputted RGB samples need to be exactly aligned with the sampling of the AD converter.
Analogue input signals can go up to "SXGA at 75 Hz" format, which gives a pixel clock of 135 MHz. In fact, it can handle any standard with a pixel rate up to 140 MHz.
Special modes are made for the F21R E-box, for both PAL and NTSC. These are invoked when an E-box is connected to the SCAVIO panel.

Digital input: Via the DVI connector (*Enhanced* version only) it is possible to insert TMDS (Transition Minimised Differential Signalling) data into the SCAVIO panel. DVI is a fairly new computer graphics standard, which can be seen as the digital follow-up of the analogue VGA interface. The TMDS signal is directly fed into the AD9887, where any DVI standard up to "SXGA at 60 Hz" can be decoded to RGBHV.
The preferred VGA standard for this chassis is programmed in the DDC EEPROM (item 7215), which can be read by the PC. Via an internal switch, it is possible to choose between the analogue input and the digital input. The output format is for both inputs the same (8 bit RGB plus HV). The driver determines whether the AD9887 outputs single or dual pixels. For lower standards like "VGA at 60 Hz", the interface will be single pixel, which means that every clock cycle one byte of R, G, and B data is outputted. Dual pixel means that on every clock cycle two bytes of R, G, and B data outputted. These two bytes are de-multiplexed, which is done to make the interface more robust for jitter, set-up, and hold times, and to reduce the digital data rate over the PCB (reduced EMC).

Digital "Video Path"
This path is only available in the *Enhanced* version of the SCAVIO panel and is used for the following input signals:

- CVBS input,
- Y/C input, and
- 1fH YPbPr.

It is a straightforward application of the Philips SAA7118 (item 7225) and the Micronas SDA9400 (item 7280).
The SAA7118 is a PAL/NTSC/SECAM Digital Video Decoder with adaptive digital comb filter and component video input. It decodes all input standards to 4:2:2 YCbCr, which then is processed by the SDA9400.

The SDA9400 is a motion adaptive de-interlacer, which makes a progressive video signal from the interlaced input.
Depending on the motion in the picture, it will just interleave the odd and even field (no motion: ABAB) or repeats the same field twice; this is also known as line doubling (motion: AABB). The motion detection is pixel based, with a soft-switch between "motion" and "no motion".

After the de-interlacer, the signal is fed as a 4:2:2 YCbCr progressive scan signal to the video port of the Pixel Works processor.

The Pixel Works PW164 Scaler
The Pixel Works PW164 Image Processor is a highly integrated (Ball Grid Array, BGA) chip, which interfaces video inputs and computer graphics in virtually any format to the PDP.

Computer images from VGA to UXGA resolution input to the chip can be resized to fit on the PDP. Horizontal and vertical image scalers, coupled with intelligent frame locking circuitry create sharp images, centred on the screen and without user intervention. An embedded DRAM frame buffer and memory controller perform the frame rate conversion.

Video data from 4:3 aspect ratio NTSC or PAL and 16:9 aspect ratio sources such as HDTV and DVD are supported. Non-linear scaling (only with Receiver Box) and separate horizontal and vertical scalers allow these inputs to be resized optimally for the native resolution of the PDP.

For more information, see *http://www.pixelworksinc.com/index.phtml*

Table 9-3 Pixel Works Scaler: Ports

Pin	Name	I/O	Remark
C2	PW_SCL	+3V3 out	to I2C devices, Video related
B1	PW_SDA	+3V3 out	to I2C devices, Video related
A1	PW_SDA_NVM	+3V3 out	to I2C device NVM
C4	PW_SCL_NVM	+3V3 out	to I2C device NVM
B3	VGA2_OUTN	+3V3 out	Selects VGA 2 as output. (Low => Output)
A2	VGA2_EN	+3V3 out	Enables VGA 2 (High = Enable)
A3	VIDEO_SEL_1	+3V3 out	to video selection switches (see truth table)
C5	VIDEO_SEL_2	+3V3 out	to video selection switches (see truth table)
B4	SCL_2	+3V3 out	to I2C device OTC
A4	SDA_2	+3V3 out	to I2C device OTC
C6	SYNC	Input	Is 'high' if EPLD detects separate sync signals on YPbPr
B5	1_2FH	Input	Is 'high' if sync on YPbPr is 1fH (from EPLD)
D6	SYNC_SEL	+3V3 out	To sync selection switches
A5	FBX_MODE	Input	Is 'high' if E-box is detected

Table 9-4 Pixel Works Scaler: Video Select

VIDEO_SEL_1	VIDEO_SEL_2	Selected input for AD9887
0	0	RGB 2fh
0	1	YPbPr 2fh
1	0	VGA 1
1	1	VGA 2

Service remark: Desoldering/soldering of this IC requires very specialised (BGA) equipment. This can only be done by the Authorised Service Centres (ASC).

The EPLD

The main reason to add the EPLD is the contrast reserve function. Other reasons:

- **Black and white ADC adjustment.** The EPLD provides a high-resolution measurement of the black and white level, to adjust the gain and offset of the ADC (AD9887). It is read via I2C.
- **LVDS reset.** This function resets the LVDS transmitter on the SCAVIO board, in case the LVDS transmitter starts up without a clock. This could cause an abnormal picture. Therefore, as soon as the clock is not fast enough (as during start-up) the EPLD will keep the LVDS transmitter in reset.
- **Receiver-box mode detection.** For loop through mode (a second FTV monitor connected to the output of the first monitor), a secondary detection is needed to check the presence of an Receiver or E-box.
- **ATSC sync detection/ decoding.** Core for proper sync decoding for ATSC sources.
- **Contrast reserve.** This function can increase the gain of the video signal to a factor of two. It will reduce the gain again if it sees too many overflows (code 255) in any of the R, G, or B channels. Adjustable via two parameters: user contrast and overflow limit. Parameters are I2C controlled.

The LVDS transmitter

This DS90C385MTD56 IC from National Semiconductors converts 28 bits of CMOS/TTL data into four LVDS (Low Voltage Differential Signalling) data streams. A PLL transmit clock is transmitted in parallel with the data streams over a fifth LVDS link. Every cycle of the clock, 28 bits of input data are sampled and transmitted. At a transmit clock frequency of 36 MHz, 24 bits of RGB data and 3 bits of display control data are transmitted per LVDS data channel. This IC operates at 3.3 V

For more information, see *http://www.national.com/pf/DS/DS90C385.html#Datasheet*

Picture Mute

In some cases, it is necessary to mute the video output:

- In monitor mode:
  - During switch "on/off" of the monitor,
  - During source change,
  - During video or sync loss, or
  - By a user action (A/V-mute or mute)
  - In audio only mode (when the ICONN-box is connected).
- In TV mode:
  - During switch "on/off" of the Monitor/Receiver box,
  - During source change in the Receiver box,
  - During video or sync loss, or
  - In audio only mode (Receiver box mutes the picture).

Most of the picture mute controls are done via the Pixel Works co-processor.

Anti Ageing

In order to prevent visible luminance differences, due to ageing of the monitor, a special algorithm is implemented. This algorithm is based on horizontal shifting of the picture in the monitor. For good understanding some terms will now first be explained:

- **Ageing:** The effect that the efficiency of a plasma cell (pixel) decreases as a function of the total time that it is illuminated. This effect occurs mostly because of phosphor ageing. As a result, the cell brightness decreases over time. An alternative name for ageing is "burn-in".
- **Picture shifting:** Fixed structures, like logo's, OSDs, and subtitles, will cause burn-in effects. The only way to mask this to a certain extends, is picture shifting so that the "burn-in" effect is smeared out over a larger area, and makes it less visible.

Most of the anti-ageing controls are implemented in the Pixel Works co-processor.

Horizontal

Horizontal anti-ageing steps:

- **Step width/height,** the step width/height shall be 1 horizontal pixel width (approx. 1 mm).
- **Number of steps,** the maximum number of steps in horizontal direction shall be 9.
- **Time between steps,** the time between the steps shall be 5 minutes.

The effect of H anti-ageing is a horizontal movement (start at 0):

0 → 1 → 2 → 3 → 4
12 ← 11← 10 ← 9 ← 8 ← 7 ← 6 ← 5 ←
→ 13→ 14 → 15

With the following sequence:
0 → 1 → 2 → ...... → 14 → 15 → 0 → 1 → etc.

After every step, the updated value is stored in NVM and gives an indication about the direction (0...4 and 13...15 to the right and 5...12 to the left).

The horizontal anti-ageing is a process, which is basically independent of any other processes that are running in SW. This means that this process should never be reset in order to get the best anti-ageing effect. Therefore, the horizontal shift positions and directions need to be stored in NVM, so that he anti-ageing process returns to its latest position after the set has been switched off or to standby. There is only one H and one V shift value for the anti-ageing process that is applicable for the AV1, AV2, and AV3 inputs.

Note: Horizontal shift cannot be done for sources that are screen filling and do not have sufficient overscan.

Vertical
V-shift is done in the F21RE Receiver box when the TV mode is active, or in the *enhanced* configuration when the monitor mode is active.

Vertical anti-ageing steps:
- **Height/height,** the height/height shall be one display line (approximately 1 mm).
- **Number of steps,** the maximum number of steps in vertical direction shall be nine.
- **Time between steps,** the time between the steps shall be 80 minutes, which equals one complete horizontal ageing shift (16 steps x 5 minutes).

The effect of V anti-ageing is a vertical movement (start at 0):
4
↑ ↓
3 5
↑ ↓
2 6
↑ ↓
1 7
↑ ↓
0 8
  ↓
  9 15
  ↓ ↑
  10 14
  ↓ ↑
  11 13
  ↓ ↑
  12

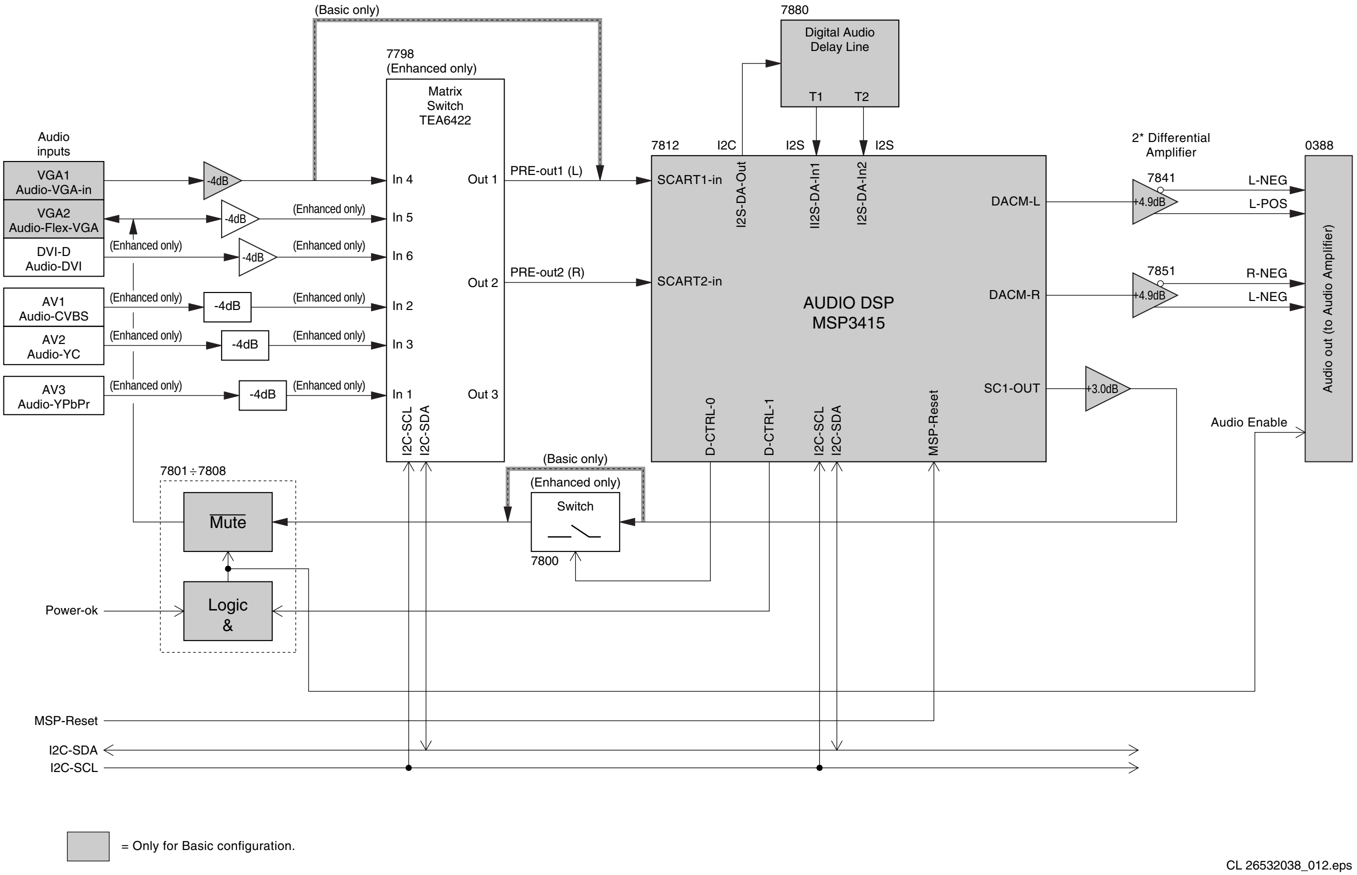
With the following sequence:
0 → 1 → 2 → ...... → 14 → 15 → 0 → 1 → etc.

After every step, the vertical shift position and its direction are stored in NVM. So the anti-ageing process returns to its last position after the set has been switched off (or to standby). Also, if by any cause (i.e. VGA-source selection or when service/factory mode is active), the anti-ageing process is stopped; the vertical shift position should be restored after resuming the anti-ageing process.

9.4.3 Audio processing (Diagrams SC13, 14 and 15)

This chapter describes the audio **processing** on the SCAVIO board. The circuit enables to connect several audio sources, selects the source on the desired input, and performs audio processing and audio delay. It also matches the output signals for the Audio Amplifier panel.

The sound-related electronics are very straight forward, and consists of a Micronas MSP3415G sound processor, an active high pass, and low pass filter, and separate Class-D amplifiers for the woofers and tweeters.


(Basic only)
7798
(Enhanced only)
Matrix
Switch
TEA6422
7880
Digital Audio
Delay Line
T1
T2
Audio
inputs
VGA1
Audio-VGA-in
VGA2
Audio-Flex-VGA
DVI-D
Audio-DVI
AV1
Audio-CVBS
AV2
Audio-YC
AV3
Audio-YPbPr
-4dB
(Enhanced only)
In 4
In 5
In 6
In 2
In 3
In 1
Out 1
Out 2
Out 3
I2C-SCL
I2C-SDA
PRE-out1 (L)
PRE-out2 (R)
7812
I2C
I2S
I2S
SCART1-in
SCART2-in
I2S-DA-Out
I2S-DA-In1
I2S-DA-In2
AUDIO DSP
MSP3415
DACM-L
DACM-R
SC1-OUT
D-CTRL-0
D-CTRL-1
MSP-Reset
2* Differential
Amplifier
7841
7851
+4.9dB
+3.0dB
L-NEG
L-POS
R-NEG
L-NEG
0388
Audio out (to Audio Amplifier)
Audio Enable
7801 ÷ 7808
Mute
Logic
&
Power-ok
Switch
7800
MSP-Reset
I2C-SDA
I2C-SCL
= Only for Basic configuration.

CL 26532038_012.eps
280302

Figure 9-15 Audio Path

The processing part consists mainly of the following components:

- **MSP3415G**: a DSP sound processor from Micronas. This component is able to do all kinds of digital signal processing like volume, bass/treble, Ultra Bass, and balance. It has analogue inputs and outputs, as well as an I2S in/output used for digital audio delay.
- **RAM** with its logic to be able to store the I2S information for audio delay.
- **Anti-plop/ mute circuit:** which is necessary to prevent disturbances on the audio lines during start-up or switching.
- **TEA6422:** a matrix switch of ST. This component is able to switch six inputs to three different outputs (only used in the Enhanced version).

MSP3415G

Ultra Bass

Because of the closed box implementation in this FM-chassis, a common DBE solution will not give an optimal bass performance. A closed box needs a substantial boost over a wide frequency range, while DBE operates in a limited frequency region.

Adaptive Ultra Bass 2 (UB2) is a suitable alternative. This feature is based on the psycho-acoustic effect of the missing fundamental, and gives the impression of a deep bass, while the loudspeakers do not reproduce these low frequencies. This feature is implemented in the MSP3415G. In the FM-chassis, this feature is always switched "on".

Audio delay

To compensate for "lip sync error" (the difference in time between the aural and visual perceptions), two different audio delays are selectable via the customer's menu (one for the Receiver box and one for the Monitor).

This is done at the audio processor IC7812 via an I2S bus and an additional delay circuit (IC7880 - 7882).

One can select delays of 24 ms (I2S_DATA_IN1) and 40 ms (I2S_DATA_IN2), or no delay.

In case of a delay, the AUDIO_L/R_IN is re-routed as I2S_DATA_OUT to the audio delay circuit and, depending on the selected delay, returned as I2S_DATA_IN1 or I2S_DATA_IN2, resulting in AUDIO_L/R_OUT.

Anti-plop/Mute

In several cases, it is necessary to mute the sound output. This muting is handled by the MSP sound processor, or by the Receiver box in case of TV-mode.

- In Monitor mode:
  - During switch "on/off" of the monitor.
  - During source change.
  - During video or sync loss, or
  - By a user action (A/V-mute or mute).
- In TV mode:
  - During switch "on/off" of the Monitor/Receiver box.
  - During source change in the Receiver box.
  - During video or sync loss, or
  - By a user action (mute).

9.4.4 Control (Diagrams SC7, 8 and 9)

Introduction

As a main controller, the so-called ARTISTIC is used, better known as OTC (**O**n screen display, **T**eletext and **C**ontrol). It is a 8051 (XA) based controller from Philips Semiconductors, the SAA5801H.
Although the OTC is the main controller, it acts as a "slave" when communicating with the Pixel Works IC via the I2C-bus 2.

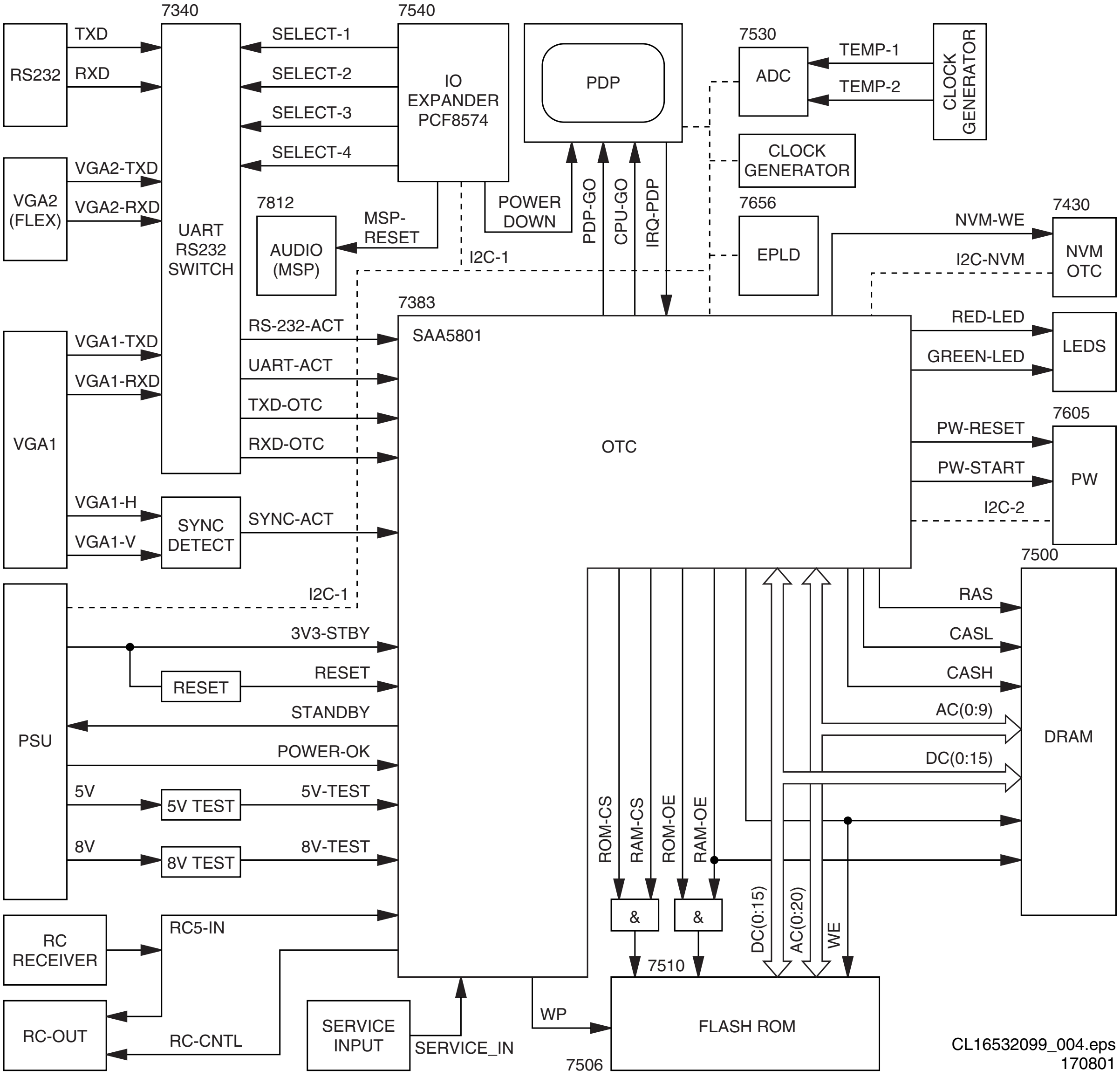
When the monitor is connected to an F21RE Receiver box, the UART commands from the Receiver box will control the monitor.

In stand-alone mode, the monitor can be controlled via the Remote Control or via the RS232C port.

DDC1/2B (Display Data Channel, an I2C based protocol) is implemented with separate NVMs for the two VGA inputs and the DVI-D input as well.

It is also possible to use the RS232C port for software upload to the PW Scaler and the OTC. The target for downloading is controlled via a switch in the RS232C path; the switch itself is controlled by the OTC.

OTC Processor



7340
7540
RS232
TXD
RXD
SELECT-1
SELECT-2
SELECT-3
SELECT-4
IO EXPANDER PCF8574
PDP
7530
ADC
TEMP-1
TEMP-2
CLOCK GENERATOR
CLOCK GENERATOR
VGA2 (FLEX)
VGA2-TXD
VGA2-RXD
UART RS232 SWITCH
7812
AUDIO (MSP)
MSP-RESET
POWER DOWN
I2C-1
PDP-GO
CPU-GO
IRQ-PDP
7656
EPLD
NVM-WE
I2C-NVM
7430
NVM OTC
7383
SAA5801
RS-232-ACT
UART-ACT
TXD-OTC
RXD-OTC
RED-LED
GREEN-LED
LEDS
VGA1
VGA1-TXD
VGA1-RXD
OTC
7605
PW-RESET
PW-START
I2C-2
PW
VGA1-H
VGA1-V
SYNC DETECT
SYNC-ACT
7500
I2C-1
PSU
3V3-STBY
RESET
RESET
STANDBY
POWER-OK
5V
5V TEST
5V-TEST
8V
8V TEST
8V-TEST
RAS
CASL
CASH
AC(0:9)
DC(0:15)
DRAM
ROM-CS
RAM-CS
ROM-OE
RAM-OE
&
&
DC(0:15)
AC(0:20)
WE
7510
RC RECEIVER
RC5-IN
RC-OUT
RC-CNTL
SERVICE INPUT
SERVICE_IN
WP
FLASH ROM
7506
CL16532099_004.eps
170801

Figure 9-16 Control Part

This part describes the Main Control part of the SCAVIO panel and the interfaces with the software. The control function consists of the following tasks:

- Control of external IOs, like fan speed, temperature, service and RC5,
- UART communication with Receiver box,
- RS232 control / communication,
- Supports the uploading of new SW into the Flash-ROMs,
- Start-up of monitor and initialisation via I2C,
- Error detection and storing.

Start-up and Shut-down

The POR signal is not generated on the PSU, but on the SCAVIO board. This is done with a fully integrated ADM810T POR chip (item 7517), which senses the 3.3 V coming from the PSU. The sense level is 3.08 V. During power-up as well as power-down, this chip will make the RESET signal high. During power-up, this signal will be held "high" until 240 ms after V_cc has become stable.
During power-down, the system will be reset as soon as the V_cc drops below 3.08 V.

Start-up from Standby

When the monitor is in standby mode, it can wake-up in several ways:

- When an RC command is received (RC_IN).
- Detection of H- and/or V-sync on VGA1.
- Detection of UART communication on VGA1.
- Detection of RS232 communication.
- Detection of Service modes.

RC Command Reception

When a RC command is received at the RC receiver on the LED panel, it will go directly to the RC input of the OTC (RC_IN on pin 100). If the monitor is in standby, and a proper RC command is send, it will wake up.
The RC commands are routed to the Receiver box via the VGA1 connector pin 9 (RC_VGA1), but this loop through connection is controlled by RC_CNTL. Below is the truth table.

Table 9-5 RC Commands overview

FTV2.1E-box	FTV Monitor	RC commands	RC_CNTL
In Standby	In Standby	Send to E-box	Low
In Standby	On	Blocked	High
On	In Standby	Send to E-box	Low
On	On	Send to E-box	Low

Note: All RC commands are direct available on a separate RC-out cinch connector (RC_OUT) on the VGA connector panel.

H- and/or V-sync Detection

When both H and V sync signals are present on VGA1, there is a pulse (low) on SYNC_ACT. When only H is present, SYNC_ACT is continuously low. The SW disables the interrupt, once an interrupt is received.

UART Communication Detection

When there is UART communication on VGA1, the UART detection circuitry generates on every falling edge a pulse on UART_ACT. This is a negative going pulse with a width of ± 470 us. The first pulse will trigger the main software to check for the FTV System Protocol (FSP). The SW disables the interrupt, once an interrupt is received.

RS232 Communication Detection

When an RS232 connection is made, and communication is started (pulses on RS232_RXD), RS232_ACT becomes "high". Via a transistor, RS232_ACT will make SERVICE_IN low. When the Monitor is operating (+5 V available), this signal is made low (in fact it is disabled).

Service Mode Detection

It is possible to enter four different Service Modes (provided the OTC is still supplied by the +3V3_STBY).
Via the SERVICE_IN signal, which is an ADC input of the OTC, a voltage drop is detected from +3.3 V to V_x.
V_x is a DC voltage, which represents the mode to be entered:

Table 9-6 Service Mode levels

Service mode	Limits Vx [V]	Vx [V]	Remarks
SDM	3.0 > Vx > 2.4	± 2.6	0382-2 to GND
SAM	2.4 > Vx > 1.8	± 2.0	0382-4 to GND
COMPAIR	1.8 > Vx > 1.2	± 1.4	0382-6 to GND
RS232 active	Vx < 0.8	>0.8	Plug in RS232, start program

I2C

There are five I2C busses used in the monitor (see also "I2C Overview" in chapter 6):

- I2C bus 1 is a (5 V) device bus, controlled by the OTC, and connected to the following devices:
  - PDP.
  - EPLD.
  - IO expander SCAVIO - PCF8574A.
  - IO expander PSU - PCF8574A.
  - ADC - PCF8591.
  - Clock generator for PW - FS6377.
  - Sound processor MSP3415G.
  - Audio switch TEA6422 (*Enhanced* version only).
- I2C bus 2 is used for communication with the Pixel Works co-processor (PW). Although the OTC is the main controller, it will act in this case as a "slave", since the PW can only act as a "master". Before any I2C commands are exchanged, the PW gets an interrupt (PW_START) to indicate that the OTC wants to talk to the PW.
- I2C bus 3 is a (3.3 V) device bus, controlled by the PW, and connected to the following devices:
  - Video Decoder SAA7118 (*Enhanced* version only).
  - De-interlacer SDA9400 (*Enhanced* version only).
  - ADC/TMDS receiver AD9887.
  - 3D Comb filter MN8783LSI (optional).
- I2C bus 4 is a (3.3 V) bus between the OTC its NVM (to avoid data corruption).
- I2C bus 5 is a (3.3 V) bus between the PW and its NVM (to avoid data corruption).

Notes:

- The PDP and EPLD are in fact 3.3 V bus devices, but they need to be connected to bus 1, since the OTC is the first controller to be fully operating at start-up. For this reason, an I2C level shifter (items 7675/76 on diagram SC12) is included, which converts the 5 V signals into 3V3 and visa versa.
- One of the first commands is to set the clock generator (item 7570), else the PW can not start-up.

RS232/UART

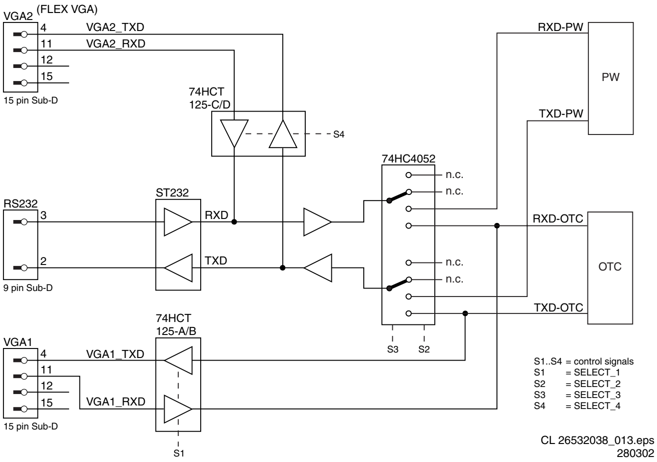


Figure 9-17 RS232/UART

The FM23 monitor is equipped with an RS232 interface. Via a nine pin Sub-D connector, it is possible to connect a PC for special modes like:

- SW download.
- Factory purposes.
- Service.
- Professional use.

A second option is the connection of a so-called ICONN-box for Institutional TV (Hotel TV).

For communication with the Receiver Box, the UART protocol is used, because this can handle longer cable distances than I2C. The (Receiver box) UART is interfaced via a 15 pin Sub-D connector (VGA connector). Via this UART connection, the F21RE Receiver box and the FM23 Monitor can communicate (via FSP). By doing so, the monitor will know that there is an

Receiver box connected and thus it is operating as a TV configuration.

RS232/UART Control
The OTC (SELECT_1 to _4) controls the RS232/UART switches. When the monitor is in Receiver box mode, there is no RS232 communication possible. The monitor is default set in Receiver box mode (switch to n.c. position) and the UART from/to VGA1 is enabled, to allow communication with Receiver box.
If no Receiver box is detected, the UART is disabled to ensure that there will be no communication towards the OTC, and the switch is set to OTC. Below the truth table of the switches is shown, which determine the TXD/RXD path.

Table 9-7 RS232/UART Control

S1= SELECT_1 (P0)	S2 = SELECT_1 (P1)	S3 = SELECT_1 (P3) (3)	S4 = SELECT_4 (P4) (4)		UART VGA1 (E-box)	UART VGA2 (flex)	RS232 set to OTC (1)	RS232 set to PW (2)
0	0	0	0		0	0	0	0
0	0	0	1		0	0	0	0
0	0	1	0		0	0	0	0
0	0	1	1		1	0	0	0
0	1	0	0		0	0	0	0
0	1	0	1		0	0	0	0
0	1	1	0		0	0	0	0
0	1	1	1		1	0	0	0
1	0	0	0		0	0	0	0
1	0	0	1		0	0	1	0
1	0	1	0		0	1	0	0
1	0	1	1		0	0	0	0
1	1	0	0		0	0	0	0
1	1	0	1		0	0	0	1
1	1	1	0		0	1	0	0
1	1	1	1		0	0	0	0

(1) Software download or ComPair mode.
(2) Software download or Debug mode.
(3) When S3 = 1 the 74HCT4052 is in a tri-state ("off" state).
(4) When S4 = 0 the TXD out of RS232 is disabled (S4 may not become low in any other case).

UART Detection
When the VGA1_RXD line is continuously "low", the OTC might run slow due the fact that so-called "break" signals are generated. To prevent this, a small circuitry is added to detect whether VGA1_RXD is continuously "low" (item 7310).
When the VGA1_RXD line is "low" for about 20 ms, the buffer-switch (item 7303-A) is opened. After this buffer, a second discrete buffer is placed (items 7315/16), which keeps the RXD_OTC line "high" and changes the 5 V into a 3.3 V level.

ICONN-box
For application of a Flat TV in a hotel environment, the monitor is designed to operate with a so-called ICONN-Box. The ICONN-box will take over the user control of the monitor, by intercepting the RC5-commands coming from a dedicated RC-transmitter, which sends specific hotel-mode commands and sending its own RC-commands to the microprocessor in the monitor.
So in the ICONN-Box, the hotel-mode commands will be converted to RC5-commands, which than can be interpreted by the monitor.
When connected to the RS232 input, this box takes over the control of the IR-receiver in the monitor. It is also able to control the front LED. The switches (7550 for the IR and 7555 for the LED signals) are controlled by the ICONN_NOT signal.

The ICONN-Box shall interface the Monitor with the following signals:

- **IR-RX.** These are the RC5-commands coming from the specific hotel RC5 - transmitter, which are received via the RC5-receiver of the monitor.
- **IR_TX.** These are the RC5-commands generated by the ICONN-Box and send to the monitor.
- **RL_ICN.** Control signal from the microprocessor (of the monitor), indicating the power state of the monitor. The ICONN-Box and monitor LED are driven in parallel.
- **GL_ICN.** Control signal from the microprocessor (of the monitor), indicating the functionality of the monitor, to drive the LED on the ICONN-Box.
- **LD_ICN.** Control signal from the ICONN-Box to drive the green LED on the monitor.

9.5 Audio Amplifier Panel (Diagram A)

9.5.1 Introduction

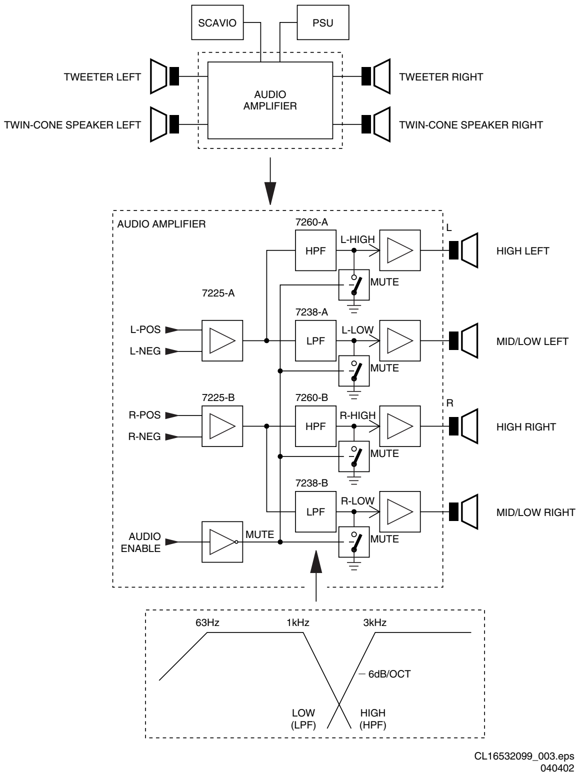


Figure 9-18 Block diagram Audio Amplifier

This panel houses the audio filters and amplifiers necessary for driving the speakers. The differential audio inputs (for common mode immunity) come from the SCAVIO panel (via connector 0388).
The PSU delivers the positive and negative supply voltage of 14.5 V_dc, as well as the +9V_STBY voltage.
After being filtered and amplified, the signals go to the speaker section, where the (twin cone) low/mid range speakers and the tweeters are driven (load impedance is 8 Ω). Shielding of these speaker magnets is not needed for a plasma screen.
Because of the limited space (no room for a bass reflex pipe), the closed box" principle has been chosen. This, in combination with the "Adaptive Ultra Bass 2", results in an acceptable bass performance.

In order to guarantee this good bass performance, the closed box has to be airtight. This is achieved by a closely fitting foam ring between the front and back part of the cabinet.

9.5.2 Supply (Diagram A7)

The supply voltage is a symmetrical voltage of +/- 14.5 V_dc, generated by the main supply via L5002.

- V_SND_POS on connector 0302 pin 5/6, and
- V_SND_NEG on connector 0302 pin 1/2.

9.5.3 Filter (Diagram A2)

Electrical filtering is needed for following reasons:

- Limiting the cone excursion, thereby reducing the distortion.
- Increasing the power handling capacity (PHC).

In this amplifier panel, active second order Sallen-Key filters are used, with crossover frequencies of 1 kHz for the low pass filter, and 3 kHz for the high pass filter.

The audio signals are filtered **before** the amplifier. There are some reasons for doing this:

- It is now easy to do active filtering, and
- At less costs (no expensive coils and capacitors).

Low Pass Filter (LPF)

For L and R separately, a Low Pass Filter (IC7238A and B) is processing L_LOW and R_LOW.
The output signal of this filter is then fed to the audio amplifier (identical for right channel).

High Pass Filter (HPF)

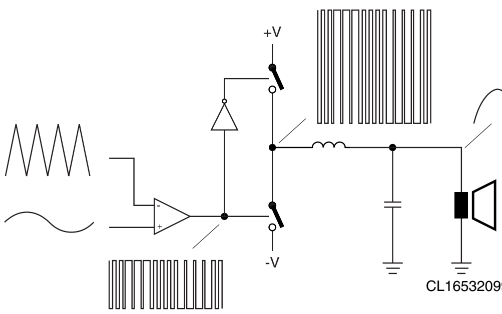
For L and R separately, a High Pass Filter (IC7260A and B) is processing L_HIGH and R_HIGH.
The output signal of this filter is then fed to the audio amplifier (identical for right channel).

9.5.4 Amplifier (Diagrams A3 to A6)

Each speaker has its own 15 W class-D amplifier. These so-called SODA (**S**elf **O**scillating class-**D** **A**mplifier) amplifiers combine a good performance with a high efficiency, resulting in a big reduction in heat generation.

Principle

Audio-power-amplifier systems have traditionally used linear amplifiers, which are well known for being inefficient. In fact, a linear Class AB amplifier is designed to act as a variable resistor network between the power supply and the load. The transistors operate in their linear region, and the voltage that is dropped across the transistors (in their role as variable resistors) is lost as heat, particularly in the output transistors. Class D amplifiers were developed as a way to increase the efficiency of audio-power-amplifier systems.



CL16532099_002.eps
200801

Figure 9-19 Principle Class-D Amplifier

The Class D amplifier works by varying the duty cycle of a Pulse Width Modulated (PWM) signal.

By comparing the input voltage to a triangle wave, the amplifier increases duty cycle to increase output voltage, and decreases duty cycle to decrease output voltage.
The output transistors (item 7365 on diagram A3) of a Class D amplifier switch from "full off" to "full on" (saturated) and then back again, spending very little time in the linear region in between. Therefore, very little power is lost to heat. If the transistors have a low "on" resistance (R_DS(ON)), little voltage is dropped across them, further reducing losses.
A Low Pass Filter at the output passes only the average of the output wave, which is an amplified version of the input signal. In order to keep the distortion low, negative feedback is applied (via R3308). A second feedback loop (via R3310) is tapped after the output filter, in order to decrease the distortion at high frequencies.

The **advantage** of Class D is increased efficiency (= less heat dissipation). Class D amplifiers can drive the same output power as a Class AB amplifier using less supply current.
The **disadvantag**e is the large output filter that drives up cost and size. The main reason for this filter is that the switching waveform results in maximum current flow. This causes more loss in the load, which causes lower efficiency. An LC filter with a cut-off frequency less than the Class D switching frequency (350 kHz), allows the switching current to flow through the filter instead of the load. The filter is less lossy than the speaker, which causes less power dissipated at high output power and increases efficiency in most cases.

9.5.5 Mute (Diagram A2 to A6)

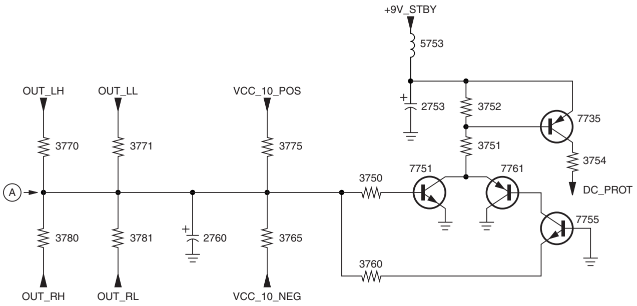
A mute switch (item 7302) is provided at the PWM inputs (item 7315, LM311). This switch is controlled by the AUDIO_ENABLE line, which checks the availability of the +9V_STBY voltage.

9.5.6 Protections

Short-circuit Protection (Diagram A3)

A protection is made against a too high temperature of transistor 7355 in case of a short-circuit of output FET 7365-1. Transistor 7340 is sensing the current through transistor 7355 via R3355, and activates the DC-protection line (see figure "DC protection") in case the current becomes too high. This is the same for all four amplifier parts.

DC-protection (Diagram A7)



CL16532099_001.eps
200801

Figure 9-20 DC Protection

Because of the symmetrical supply, a DC-blocking capacitor, between the amplifier and the speaker, is not necessary. However, it is still necessary to protect the speaker for DC voltages.
The following protections are therefore implemented:

- Via R3765 and R3775, each stabilised supply voltage line (via items 7735 and 7745) is checked on deviations.
- Via R3770/3771/3780/3781, each amplifier output is checked for DC-voltage.

Via R3765/3775, a virtual earth is imposed on point A. When one of the supply voltages deviates, a DC voltage will occur on this point. If point A is positive, T7751 will conduct. If it is negative, T7761 will conduct.
Both cases will make T7735 conduct, so that the DC-PROT signal will be made high. This ensures that the power supply is rapidly trimmed back.
Capacitor C2760 will ensure that only DC-signals at point A will activate the protection.

9.6 LED/Switch Panel (Diagram LD)

This panel contains:
- The red and green status LEDs,
- The RC input receiver,
- The light sensor, and
- The "on/off" switch.

All signals on this panel come directly from the SCAVIO panel:
- The LED and sensor signals (RED_LED, GREEN_LED and LIGHT_SEN_IN) are routed to the OTC. When a F21RE Receiver box is connected, the sensor signal is routed to the OTC of this box (via UART), where it will control the HOP via I2C.
- The RC signal (RC_IN) is routed to the OTC, the VGA1 connector, and the RC-out cinch connector.
- The signals to (+9V_STBY) and from (+9V_STBY_SW) the "on/off" switch are routed to the PSU board.

9.7 Plasma Display Panel (PDP)

9.7.1 General

The PDP, which is used in this chassis, is a product of Fujitsu Hitachi Plasma Display Ltd (FHP). When defect, a new panel must be ordered, and after receipt, the defective panel must be send for repair in the packing (flight case) of the new ordered panel.

9.7.2 Operation

Principle
Plasma displays work by applying a voltage between two transparent display electrodes on the front glass plate of the display. The electrodes are separated by an MgO dielectric layer and surrounded by a mixture of neon and xenon gases. When the voltage reaches the "firing level", a plasma discharge occurs on the surface of the dielectric, resulting in the emission of ultra violet light.
This UV light then excites the phosphor material at the back of the cell and emits visible light. Each cell or sub-pixel has red, blue or green phosphor material and three sub-pixels combine to make up a pixel. The intensity of each colour is controlled by varying the number and width of voltage pulses applied to the sub-pixel during a picture frame. This is implemented by dividing each picture frame into sub-frames. During a sub-frame, all cells are first addressed - those to be lit are pre-charged to a specific address voltage - then during the display time the display voltage is applied to the entire screen lighting those that were addressed.
Each sub-frame has a weighting ranging from 1 time unit to 128 time units for a typical eight sub-frame arrangement (Time Unit depends on size and number of pixels on the screen). This is a purely digital PWM control mechanism, which is a key advantage as it eliminates any unnecessary digital to analogue conversions, making the PDP technology ideal for the all-digital age.

Achieving High Resolution
While conventional technology, as found in standard VGA resolution screens, uses 2 display electrodes for each horizontal line, applying the same method to achieve higher resolution (>1000 horizontal lines) brings inherent problems. Firstly, the number of electrodes would need to be doubled which would require very high precision production processes. Secondly, the cell aperture ratio would reduce resulting in lower brightness. In addition, either the driving scheme would have to operate with double the speed, again introducing significantly higher cost, or a dual-scan technique would have to be introduced. With dual-scan, twice as many driving ICs would be required. In summary, implementing high resolution with conventional technology would result in lower brightness and increased costs.

ALiS Technology
To achieve high brightness as well as cost-effectiveness, FHP developed ALiS (Alternate Lighting of Surfaces) Technology. ALiS is based on 3 principles:
- Odd and Even lines are displayed separately
- The non-lighting area between the cells is utilised
- The number of electrodes = the number of horizontal display lines + 1

Despite the smaller cell size, the aperture ratio can be increased from 40% to 65% meaning that the screen is inherently brighter. Another spin-off benefit is that the lighting duty is reduced to 50% (odd fields and even fields lit for half of each frame) meaning that a significantly improved phosphor lifetime can be expected.

For more information, see *http://www.fme.fujitsu.com/products/displays/pdp.html*

9.8 Abbreviation List

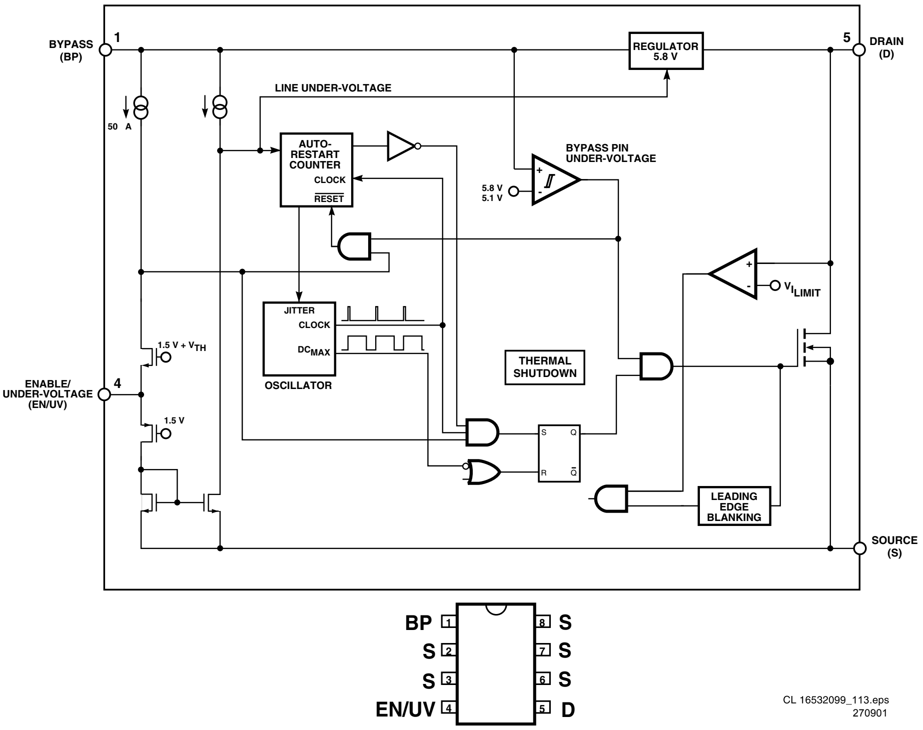
ADC	Analogue to Digital Converter
ALiS	Alternate Lighting of Surfaces, new plasma display technology
AM	Amplitude Modulation
AP	Asia Pacific
AV	External Audio Video
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BGA	Ball Grid Array
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
ComPair	Computer aided rePair
CVBS	Composite Video Blanking and Synchronisation
DAC	Digital to Analogue Converter
DDC	Display Data Channel (a protocol based on I2C)
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DFU	Direction For Use: description for the end user
DNR	Dynamic Noise Reduction
DRAM	Dynamic RAM
DSP	Digital Signal Processing
DTS	Digital Theatre Sound
DVD	Digital Versatile Disc
DVI-d	Digital Visual Interface, d = digital only
EEPROM	Electrically Erasable and Programmable Read Only Memory
EMI	Electro Magnetic Interference
EPLD	Erasable Programmable Logic Device
EU	Europe
EXT	External (source), entering the set via SCART or Cinch
FLASH	Flash memory
FM	Frequency Modulation
FSP	FTV System Protocol
FTV	Flat TeleVision
HP	Headphone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I2C	Integrated IC bus
I2S	Integrated IC Sound bus
ICONN	Institutional CONNector
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt Request
LATAM	Latin America
LED	Light Emitting Diode
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	Loudspeaker
LVDS	Low Voltage Differential Signalling
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device
MPEG	Motion Pictures Experts Group
NC	Not Connected
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
NTC	Negative Temperature Coefficient, non-linear resistor
NTSC	National Television Standard Committee. Colour system mainly used in North America and Japan. Colour carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non Volatile Memory: IC containing TV related data e.g. alignments
OC	Open Circuit
OSD	On Screen Display
OTC	On screen display, Teletext and Control
P50	Project 50 or Easy Link
PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PCB	Printed Circuit Board
PCM	Pulse Code Modulation
PDP	Plasma Display Panel
PFC	Power Factor Corrector (or Pre-conditioner)
PIP	Picture In Picture
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
POR	Power On Reset, signal to reset the P
Progressive Scan	Scan mode, where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PTC	Positive Temperature Coefficient, non linear resistor
PW	Pixel Works (manufacturer) video scaling co-processor
PWM	Pulse Width Modulation
RAM	Random Access Memory
RC	Remote Control handset
RC5	Remote Control system 5, signal from the remote control receiver
RGB	Red Green Blue
ROM	Read Only Memory
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
SCAVIO	Scaler Control Audio Video Input and Output
SCL	Serial Clock I2C
SDA	Serial Data I2C
SDRAM	Synchronous DRAM
SECAM	SEequence Couleur Avec Memoire. Colour system mainly used in France and East Europe. Colour carriers = 4.406250 MHz and 4.250000 MHz
SMPS	Switched Mode Power Supply
SOG	Sync On Green
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace
SRAM	Static RAM
STBY	Standby
SVHS	Super Video Home System
SW	Software
SXGA	1280x1024
THD	Total Harmonic Distortion
TMDS	Transition Minimised Differential Signalling
TXT	Teletext
UART	Universal Asynchronous Receiver Transmitter, 2-wire bus which can handle longer cables than I2C.

P	Microprocessor
VCR	Video Cassette Recorder
V_a	Addressing voltage for the plasma display
V_ra	Setting voltage for V_a
V_rs	Setting voltage for V_s
V_s	Sustain voltage for the plasma display
Y/C	Luminance (Y) and Chrominance (C) signal
YUV	Component video
0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format

9.9 IC Data

In this paragraph, the internal block diagrams and pinning are given of ICs that are drawn as a "black box" in the electrical diagrams (with exception of "memory" and "logic" ICs).

9.9.1 Diagram P2, TNY256 (IC7500)

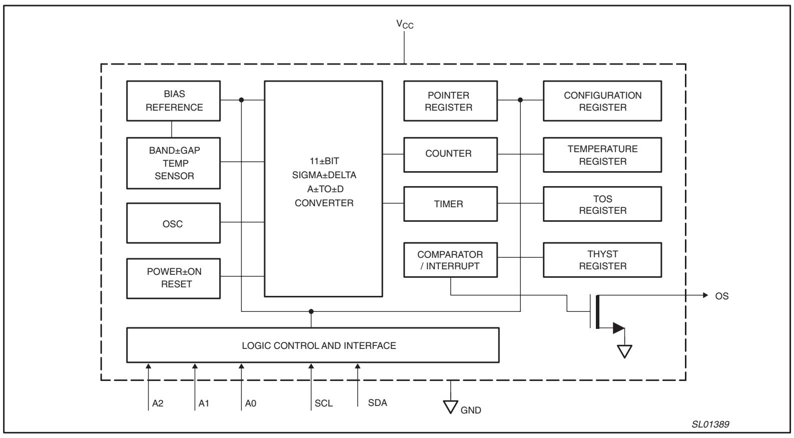

BYPASS (BP)
1
5
DRAIN (D)
REGULATOR 5.8 V
LINE UNDER-VOLTAGE
50 A
AUTO-RESTART COUNTER
CLOCK
RESET
BYPASS PIN UNDER-VOLTAGE
5.8 V
5.1 V
+
-
$V_{I_{LIMIT}}$
JITTER
CLOCK
DC_{MAX}
OSCILLATOR
THERMAL SHUTDOWN
1.5 V + V_{TH}
ENABLE/ UNDER-VOLTAGE (EN/UV)
4
1.5 V
S
Q
R
Q̄
LEADING EDGE BLANKING
SOURCE (S)
BP 1
S 2
S 3
EN/UV 4
8 S
7 S
6 S
5 D

CL 16532099_113.eps
270901

Figure 9-21 Internal block diagram and pinning

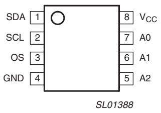
9.9.2 Diagram P3, LM75A (IC7372)

SIMPLIFIED BLOCK DIAGRAM


V_{CC}
BIAS REFERENCE
BAND±GAP TEMP SENSOR
OSC
POWER±ON RESET
11±BIT SIGMA±DELTA A±TO±D CONVERTER
POINTER REGISTER
COUNTER
TIMER
COMPARATOR / INTERRUPT
CONFIGURATION REGISTER
TEMPERATURE REGISTER
TOS REGISTER
THYST REGISTER
OS
LOGIC CONTROL AND INTERFACE
A2
A1
A0
SCL
SDA
GND
SL01389

PINNING

Pin configuration


SDA 1
SCL 2
OS 3
GND 4
8 V_{CC}
7 A0
6 A1
5 A2
SL01388

Pin description

PIN	SYMBOL	DESCRIPTION
1	SDA	Digital I/O. I^2C serial bi-directional data line. Open Drain.
2	SCL	Digital input. I^2C serial clock input.
3	OS	Overtemp Shutdown output. Open Drain.
4	GND	Ground. To be connected to the system ground.
5	A2	Digital input. User-defined address bit2.
6	A1	Digital input. User-defined address bit1.
7	A0	Digital input. User-defined address bit0.
8	V_{CC}	Power supply.

CL 36532051_033.eps
030703

Figure 9-22 Internal block diagram and pinning

9.9.3 Diagram P5, MC33368 (IC7650)

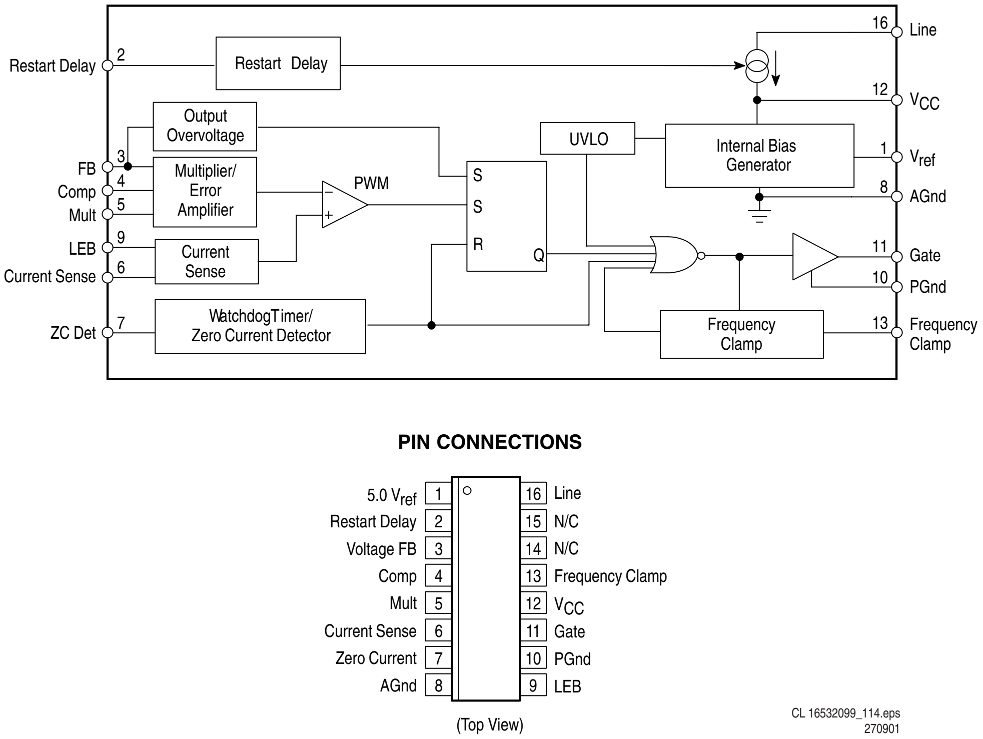

Restart Delay
2
Restart Delay
16
Line
12
VCC
Output Overvoltage
UVLO
Internal Bias Generator
1
Vref
FB
3
4
Comp
5
Mult
Multiplier/ Error Amplifier
PWM
S
S
R
Q
8
AGnd
LEB
9
6
Current Sense
Current Sense
11
Gate
10
PGnd
ZC Det
7
WatchdogTimer/ Zero Current Detector
Frequency Clamp
13
Frequency Clamp
PIN CONNECTIONS
5.0 Vref 1
Restart Delay 2
Voltage FB 3
Comp 4
Mult 5
Current Sense 6
Zero Current 7
AGnd 8
16 Line
15 N/C
14 N/C
13 Frequency Clamp
12 VCC
11 Gate
10 PGnd
9 LEB
(Top View)
CL 16532099_114.eps
270901

Figure 9-23 Internal block diagram and pinning

9.9.4 Diagram P7, TEA1507 (IC7112 and IC7212)

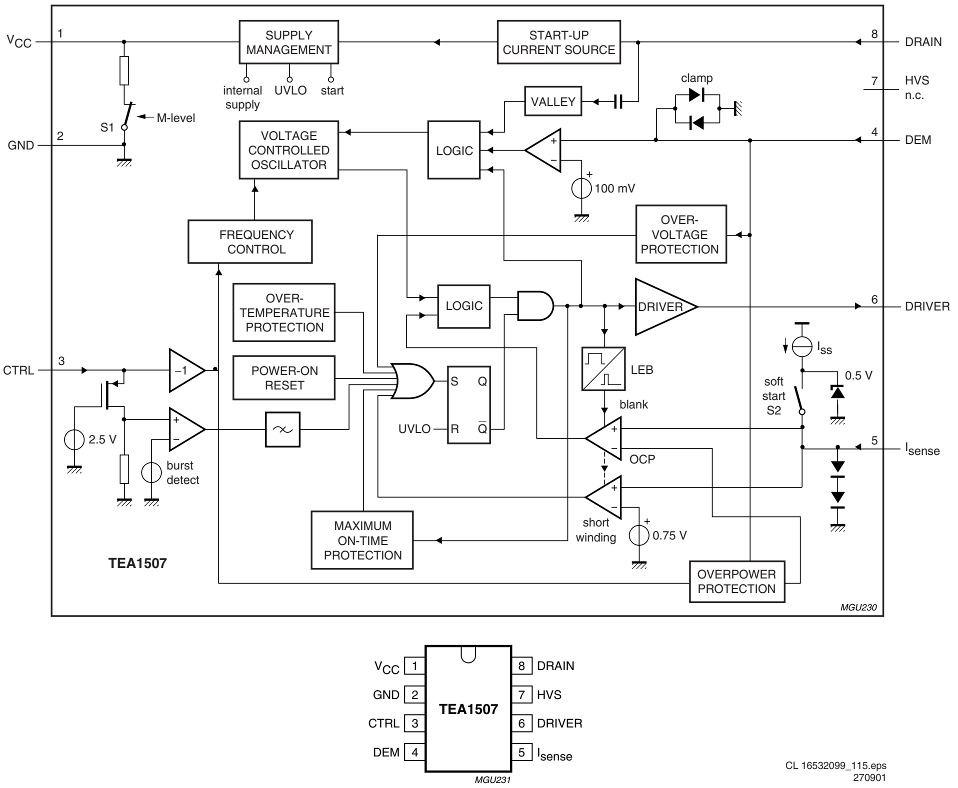
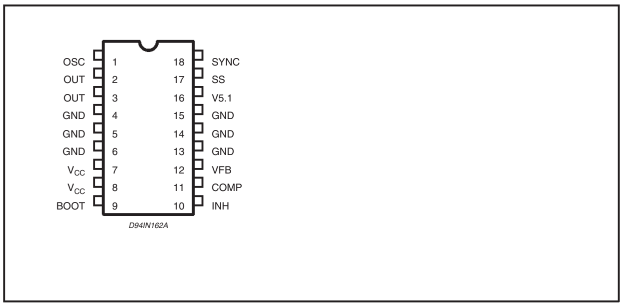
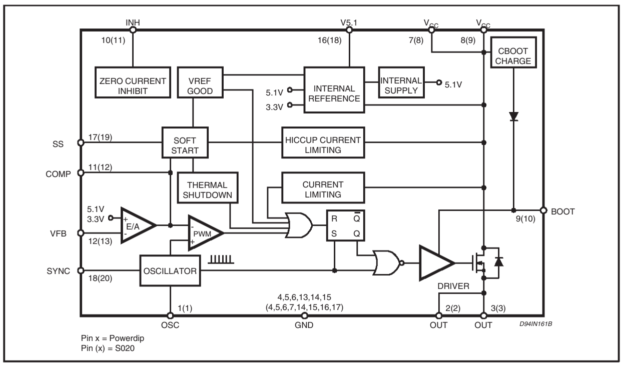

VCC
1
SUPPLY MANAGEMENT
START-UP CURRENT SOURCE
8
DRAIN
internal supply
UVLO
start
7
HVS
n.c.
VALLEY
clamp
M-level
S1
GND
2
VOLTAGE CONTROLLED OSCILLATOR
LOGIC
4
DEM
100 mV
FREQUENCY CONTROL
OVER-VOLTAGE PROTECTION
OVER-TEMPERATURE PROTECTION
LOGIC
DRIVER
6
DRIVER
CTRL
3
−1
POWER-ON RESET
S
Q
R
Q̄
UVLO
LEB
blank
Iss
soft start
S2
0.5 V
2.5 V
burst detect
OCP
5
Isense
short winding
0.75 V
MAXIMUM ON-TIME PROTECTION
TEA1507
OVERPOWER PROTECTION
MGU230
VCC 1
GND 2
CTRL 3
DEM 4
TEA1507
8 DRAIN
7 HVS
6 DRIVER
5 Isense
MGU231
CL 16532099_115.eps
270901

Figure 9-24 Internal Block Diagram and pinning TEA1507

9.9.5 Diagram P7, L4973V (IC7260)


OSC 1
OUT 2
OUT 3
GND 4
GND 5
GND 6
VCC 7
VCC 8
BOOT 9
INH 10
COMP 11
VFB 12
GND 13
GND 14
GND 15
V5.1 16
SS 17
SYNC 18
D94IN162A

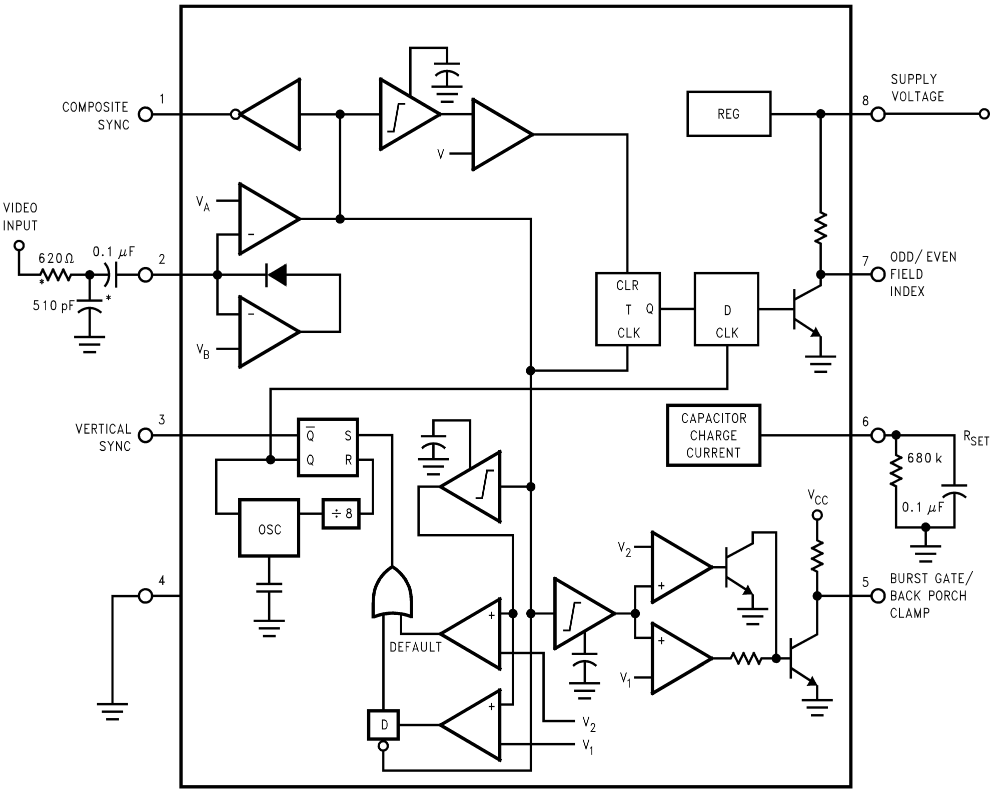
BLOCK DIAGRAM


INH
10(11)
V5.1
16(18)
VCC
7(8)
VCC
8(9)
CBOOT CHARGE
ZERO CURRENT INHIBIT
VREF GOOD
5.1V
3.3V
INTERNAL REFERENCE
INTERNAL SUPPLY
5.1V
SS
17(19)
SOFT START
HICCUP CURRENT LIMITING
COMP
11(12)
THERMAL SHUTDOWN
CURRENT LIMITING
BOOT
9(10)
5.1V
3.3V
E/A
PWM
R Q
S Q
VFB
12(13)
SYNC
18(20)
OSCILLATOR
DRIVER
4,5,6,13,14,15
(4,5,6,7,14,15,16,17)
1(1)
OSC
GND
2(2)
OUT
3(3)
OUT
D94IN161B
Pin x = Powerdip
Pin (x) = S020

CL 16532099_116.eps
270901

Figure 9-25 Internal Block Diagram and pinning L4973

9.9.6 Diagram SC2, LM1881M (7040)


COMPOSITE SYNC
1
VIDEO INPUT
620Ω
0.1 μF
510 pF
2
VA
VB
V
VERTICAL SYNC
3
Q̄ S
Q R
OSC
÷ 8
4
DEFAULT
D
V2
V1
REG
CLR
T Q
CLK
D
CLK
CAPACITOR CHARGE CURRENT
SUPPLY VOLTAGE
8
ODD/ EVEN FIELD INDEX
7
6
RSET
680 k
0.1 μF
VCC
5
BURST GATE/ BACK PORCH CLAMP

CL 16532099_117.eps
270901

Figure 9-26 Internal Block Diagram and pinning LM1881

9.9.7 Diagram SP2, PCF8591 (7530)

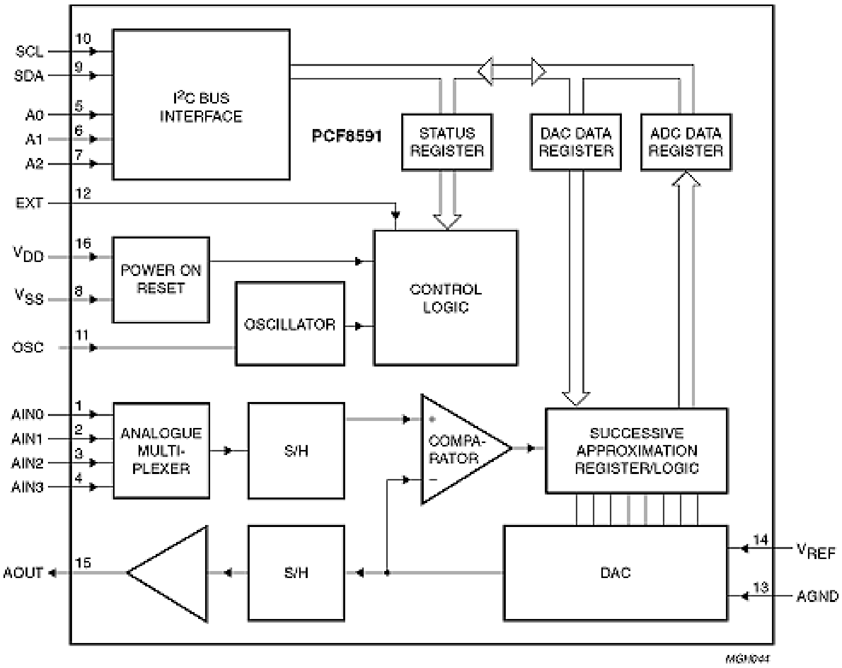

SCL
SDA
A0
A1
A2
EXT
VDD
VSS
OSC
AIN0
AIN1
AIN2
AIN3
AOUT
10
9
5
6
7
12
16
8
11
1
2
3
4
15
14
13
I²C BUS INTERFACE
PCF8591
STATUS REGISTER
DAC DATA REGISTER
ADC DATA REGISTER
POWER ON RESET
OSCILLATOR
CONTROL LOGIC
ANALOGUE MULTI-PLEXER
S/H
COMPA-RATOR
+
–
SUCCESSIVE APPROXIMATION REGISTER/LOGIC
S/H
DAC
VREF
AGND
MGN044

Figure 9-27 Internal Block Diagram PCF8591

10. Spare Parts List

Audio Panel [A]

Various

0302	2422 025 16846	Connector 9P m h
0303	2422 025 16702	Connector 5P m h
0304	2422 025 16543	Connector 4P m
0388	2422 025 16703	Connector 7P m
0388	2422 025 16704	Connector 8P m
1730	4822 071 52502	Fuse 2.5A
1730	4822 253 50137	Fuse 2.5A
1740	4822 071 52502	Fuse 2.5A
1740	4822 253 50137	Fuse 2.5A

⊣⊢

2201	4822 126 13193	4.7nF 10% 63V
2202	4822 124 23002	10µF 20% 16V
2204	4822 126 14226	82pF 5% 50V 0603
2205	4822 126 13193	4.7nF 10% 63V
2206	4822 124 23002	10µF 20% 16V
2207	4822 126 14226	82pF 5% 50V 0603
2212	5322 126 11578	1nF 10% 50V 0603
2215	4822 126 13193	4.7nF 10% 63V
2216	4822 124 23002	10µF 20% 16V
2218	4822 126 14226	82pF 5% 50V 0603
2220	4822 126 13193	4.7nF 10% 63V
2221	4822 124 23002	10µF 20% 16V
2222	4822 126 14226	82pF 5% 50V 0603
2224	2238 586 59812	100nF 20-80% 50V 0603
2224	4822 126 14305	100nF 10% 16V 0603
2225	2238 586 59812	100nF 20-80% 50V 0603
2225	4822 126 14305	100nF 10% 16V 0603
2233	2020 552 96325	25V 68nF 10%
2233	3198 017 31530	15nF 20% 50V 0603
2233	3198 017 36830	68nF 10% 16V 0603
2233	5322 126 11582	6.8nF 10% 63V
2234	2238 586 59812	100nF 20-80% 50V 0603
2234	3198 017 31530	15nF 20% 50V 0603
2234	4822 126 14494	22nF 10% 25V 0603
2238	2238 586 59812	100nF 20-80% 50V 0603
2238	4822 126 14305	100nF 10% 16V 0603
2239	2238 586 59812	100nF 20-80% 50V 0603
2239	4822 126 14305	100nF 10% 16V 0603
2243	2020 552 96325	25V 68nF 10%
2243	3198 017 31530	15nF 20% 50V 0603
2243	3198 017 36830	68nF 10% 16V 0603
2243	5322 126 11582	6.8nF 10% 63V
2244	2238 586 59812	100nF 20-80% 50V 0603
2244	3198 017 31530	15nF 20% 50V 0603
2244	4822 126 14494	22nF 10% 25V 0603
2255	4822 126 13193	4.7nF 10% 63V
2255	4822 126 14494	22nF 10% 25V 0603
2256	4822 126 13193	4.7nF 10% 63V
2256	4822 126 14494	22nF 10% 25V 0603
2260	2238 586 59812	100nF 20-80% 50V 0603
2260	4822 126 14305	100nF 10% 16V 0603
2261	2238 586 59812	100nF 20-80% 50V 0603
2261	4822 126 14305	100nF 10% 16V 0603
2270	4822 126 13193	4.7nF 10% 63V
2270	4822 126 14494	22nF 10% 25V 0603
2271	4822 126 13193	4.7nF 10% 63V
2271	4822 126 14494	22nF 10% 25V 0603
2309	4822 126 14247	1.5nF 50V 0603
2310	4822 126 14226	82pF 5% 50V 0603
2315	4822 124 12084	1µF 20% 50V
2315	4822 124 23002	10µF 20% 16V
2316	2238 586 59812	100nF 20-80% 50V 0603
2316	4822 126 14305	100nF 10% 16V 0603
2318	2238 586 59812	100nF 20-80% 50V 0603
2318	4822 126 14305	100nF 10% 16V 0603
2319	4822 124 12084	1µF 20% 50V
2319	4822 124 23002	10µF 20% 16V
2330	2238 586 59812	100nF 20-80% 50V 0603
2330	4822 126 14305	100nF 10% 16V 0603
2334	2020 012 93764	220µF 20% 35V
2335	2238 586 59812	100nF 20-80% 50V 0603
2335	4822 126 14305	100nF 10% 16V 0603
2340	5322 126 11583	10nF 10% 50V 0603
2355	2238 586 59812	100nF 20-80% 50V 0603
2355	4822 126 14305	100nF 10% 16V 0603
2359	2238 586 59812	100nF 20-80% 50V 0603
2359	4822 126 14305	100nF 10% 16V 0603
2360	2020 012 93764	220µF 20% 35V
2365	2020 552 96326	220nF 10% 16V
2366	2020 552 96326	220nF 10% 16V
2409	4822 126 14247	1.5nF 50V 0603
2410	4822 126 14226	82pF 5% 50V 0603
2415	4822 124 12084	1µF 20% 50V
2415	4822 124 23002	10µF 20% 16V
2416	2238 586 59812	100nF 20-80% 50V 0603
2416	4822 126 14305	100nF 10% 16V 0603
2418	2238 586 59812	100nF 20-80% 50V 0603
2418	4822 126 14305	100nF 10% 16V 0603
2419	4822 124 12084	1µF 20% 50V
2419	4822 124 23002	10µF 20% 16V
2430	2238 586 59812	100nF 20-80% 50V 0603
2430	4822 126 14305	100nF 10% 16V 0603
2434	2020 012 93764	220µF 20% 35V
2435	2238 586 59812	100nF 20-80% 50V 0603
2435	4822 126 14305	100nF 10% 16V 0603
2440	5322 126 11583	10nF 10% 50V 0603
2455	2238 586 59812	100nF 20-80% 50V 0603
2455	4822 126 14305	100nF 10% 16V 0603
2459	2238 586 59812	100nF 20-80% 50V 0603
2459	4822 126 14305	100nF 10% 16V 0603
2460	2020 012 93764	220µF 20% 35V
2465	2020 552 96326	220nF 10% 16V
2466	2020 552 96326	220nF 10% 16V
2509	4822 126 14247	1.5nF 50V 0603
2510	4822 126 14226	82pF 5% 50V 0603
2515	4822 124 12084	1µF 20% 50V
2515	4822 124 23002	10µF 20% 16V
2516	2238 586 59812	100nF 20-80% 50V 0603
2516	4822 126 14305	100nF 10% 16V 0603
2518	2238 586 59812	100nF 20-80% 50V 0603
2518	4822 126 14305	100nF 10% 16V 0603
2519	4822 124 12084	1µF 20% 50V
2519	4822 124 23002	10µF 20% 16V
2530	2238 586 59812	100nF 20-80% 50V 0603
2530	4822 126 14305	100nF 10% 16V 0603
2534	2020 012 93764	220µF 20% 35V
2535	2238 586 59812	100nF 20-80% 50V 0603
2535	4822 126 14305	100nF 10% 16V 0603
2540	5322 126 11583	10nF 10% 50V 0603
2555	2238 586 59812	100nF 20-80% 50V 0603
2555	4822 126 14305	100nF 10% 16V 0603
2559	2238 586 59812	100nF 20-80% 50V 0603
2559	4822 126 14305	100nF 10% 16V 0603
2560	2020 012 93764	220µF 20% 35V
2565	2020 552 96326	220nF 10% 16V
2566	2020 552 96326	220nF 10% 16V
2609	4822 126 14247	1.5nF 50V 0603
2610	4822 126 14226	82pF 5% 50V 0603
2615	4822 124 12084	1µF 20% 50V
2615	4822 124 23002	10µF 20% 16V
2616	2238 586 59812	100nF 20-80% 50V 0603
2616	4822 126 14305	100nF 10% 16V 0603
2618	2238 586 59812	100nF 20-80% 50V 0603
2618	4822 126 14305	100nF 10% 16V 0603
2619	4822 124 12084	1µF 20% 50V
2619	4822 124 23002	10µF 20% 16V
2630	2238 586 59812	100nF 20-80% 50V 0603
2630	4822 126 14305	100nF 10% 16V 0603
2634	2020 012 93764	220µF 20% 35V
2635	2238 586 59812	100nF 20-80% 50V 0603
2635	4822 126 14305	100nF 10% 16V 0603
2640	5322 126 11583	10nF 10% 50V 0603
2655	2238 586 59812	100nF 20-80% 50V 0603
2655	4822 126 14305	100nF 10% 16V 0603
2659	2238 586 59812	100nF 20-80% 50V 0603
2659	4822 126 14305	100nF 10% 16V 0603
2660	2020 012 93764	220µF 20% 35V
2665	2020 552 96326	220nF 10% 16V
2666	2020 552 96326	220nF 10% 16V
2730	2020 012 93764	220µF 20% 35V
2732	2020 012 93764	220µF 20% 35V
2733	4822 124 23002	10µF 20% 16V
2734	4822 124 12084	1µF 20% 50V
2734	4822 124 23002	10µF 20% 16V
2740	2020 012 93764	220µF 20% 35V
2742	2020 012 93764	220µF 20% 35V
2743	4822 124 23002	10µF 20% 16V
2744	4822 124 12084	1µF 20% 50V
2744	4822 124 23002	10µF 20% 16V
2752	4822 124 23002	10µF 20% 16V
2753	4822 124 23002	10µF 20% 16V
2759	5322 126 11578	1nF 10% 50V 0603
2760	5322 124 41945	22µF 20% 35V
2770	5322 126 11578	1nF 10% 50V 0603
2771	5322 126 11578	1nF 10% 50V 0603
2780	5322 126 11578	1nF 10% 50V 0603
2781	5322 126 11578	1nF 10% 50V 0603
2799	5322 126 11583	10nF 10% 50V 0603

-ww-

3201	4822 051 30221	220Ω 5% 0.062W
3202	4822 051 30102	1kΩ 5% 0.062W
3203	4822 051 30272	2.7kΩ 5% 0.062W
3203	4822 051 30332	3.3kΩ 5% 0.062W
3205	4822 051 30221	220Ω 5% 0.062W
3206	4822 051 30102	1kΩ 5% 0.062W
3207	4822 051 30272	2.7kΩ 5% 0.062W
3207	4822 051 30332	3.3kΩ 5% 0.062W
3210	4822 051 30333	33kΩ 5% 0.062W
3211	4822 117 13632	100kΩ 1% 0603 0.62W
3215	4822 051 30221	220Ω 5% 0.062W
3216	4822 051 30102	1kΩ 5% 0.062W
3217	4822 051 30272	2.7kΩ 5% 0.062W
3217	4822 051 30332	3.3kΩ 5% 0.062W
3220	4822 051 30221	220Ω 5% 0.062W
3221	4822 051 30102	1kΩ 5% 0.062W
3222	4822 051 30272	2.7kΩ 5% 0.062W
3222	4822 051 30332	3.3kΩ 5% 0.062W
3230	4822 051 30101	100Ω 5% 0.062W
3231	4822 051 30103	10kΩ 5% 0.062W
3231	4822 051 30222	2.2kΩ 5% 0.062W
3232	4822 051 30103	10kΩ 5% 0.062W
3232	4822 051 30152	1.5kΩ 5% 0.062W
3232	4822 051 30682	6.8kΩ 5% 0.062W
3233	4822 051 30103	10kΩ 5% 0.062W
3233	4822 051 30222	2.2kΩ 5% 0.062W
3234	4822 051 30272	2.7kΩ 5% 0.062W
3234	4822 051 30561	560Ω 5% 0.062W
3234	4822 117 12917	1Ω 5% 0.062W 0603
3240	4822 051 30101	100Ω 5% 0.062W
3241	4822 051 30103	10kΩ 5% 0.062W
3241	4822 051 30222	2.2kΩ 5% 0.062W
3242	4822 051 30103	10kΩ 5% 0.062W
3242	4822 051 30152	1.5kΩ 5% 0.062W
3242	4822 051 30682	6.8kΩ 5% 0.062W
3243	4822 051 30103	10kΩ 5% 0.062W
3243	4822 051 30222	2.2kΩ 5% 0.062W
3244	4822 051 30272	2.7kΩ 5% 0.062W
3244	4822 051 30561	560Ω 5% 0.062W
3244	4822 117 12917	1Ω 5% 0.062W 0603
3255	4822 051 30562	5.6kΩ 5% 0.063W 0603
3255	4822 117 11817	1.2kΩ 1% 1/16W
3256	4822 051 30153	15kΩ 5% 0.062W
3256	4822 051 30332	3.3kΩ 5% 0.062W
3257	4822 051 30222	2.2kΩ 5% 0.062W
3257	4822 051 30471	470Ω 5% 0.062W
3259	4822 117 12917	1Ω 5% 0.062W 0603
3270	4822 051 30562	5.6kΩ 5% 0.063W 0603
3270	4822 117 11817	1.2kΩ 1% 1/16W
3271	4822 051 30153	15kΩ 5% 0.062W
3271	4822 051 30332	3.3kΩ 5% 0.062W
3272	4822 051 30222	2.2kΩ 5% 0.062W
3272	4822 051 30471	470Ω 5% 0.062W
3274	4822 117 12917	1Ω 5% 0.062W 0603
3301	4822 051 30102	1kΩ 5% 0.062W
3301	4822 117 12902	8.2kΩ 1% 0.063W 0603
3302	4822 051 30103	10kΩ 5% 0.062W
3302	4822 051 30472	4.7kΩ 5% 0.062W
3303	4822 051 30102	1kΩ 5% 0.062W
3304	4822 051 30472	4.7kΩ 5% 0.062W
3306	4822 117 12902	8.2kΩ 1% 0.063W 0603
3306	4822 117 12903	1.8kΩ 1% 0.063W 0603
3307	4822 117 13632	100kΩ 1% 0603 0.62W
3308	4822 117 13632	100kΩ 1% 0603 0.62W
3309	4822 051 30181	180Ω 5% 0.062W
3310	4822 117 12864	82kΩ 5% 0.6W
3311	4822 051 30682	6.8kΩ 5% 0.062W
3311	4822 117 12917	1Ω 5% 0.062W 0603
3315	5322 117 11726	10Ω 5%
3318	5322 117 11726	10Ω 5%
3325	4822 117 11449	2.2kΩ 5% 0.1W 0805
3327	4822 117 11449	2.2kΩ 5% 0.1W 0805
3328	4822 051 30102	1kΩ 5% 0.062W
3330	5322 117 11726	10Ω 5%
3336	4822 051 30475	4.7MΩ 5% 0.062W 0603
3336	4822 117 12891	220kΩ 1% 0.063W 0603
3337	5322 117 11726	10Ω 5%
3340	4822 051 30103	10kΩ 5% 0.062W
3355	5322 117 11726	10Ω 5%
3361	4822 051 30475	4.7MΩ 5% 0.062W 0603
3361	4822 117 12891	220kΩ 1% 0.063W 0603
3362	5322 117 11726	10Ω 5%
3401	4822 051 30102	1kΩ 5% 0.062W
3401	4822 117 12902	8.2kΩ 1% 0.063W 0603
3402	4822 051 30103	10kΩ 5% 0.062W
3402	4822 051 30472	4.7kΩ 5% 0.062W

3403	4822 051 30102	1kΩ 5% 0.062W
3404	4822 051 30472	4.7kΩ 5% 0.062W
3406	4822 117 12902	8.2kΩ 1% 0.063W 0603
3406	4822 117 12903	1.8kΩ 1% 0.063W 0603
3407	4822 117 13632	100kΩ 1% 0603 0.62W
3408	4822 117 13632	100kΩ 1% 0603 0.62W
3409	4822 051 30181	180Ω 5% 0.062W
3410	4822 117 12864	82kΩ 5% 0.6W
3411	4822 051 30153	15kΩ 5% 0.062W
3415	5322 117 11726	10Ω 5%
3418	5322 117 11726	10Ω 5%
3425	4822 117 11449	2.2kΩ 5% 0.1W 0805
3427	4822 117 11449	2.2kΩ 5% 0.1W 0805
3428	4822 051 30102	1kΩ 5% 0.062W
3430	5322 117 11726	10Ω 5%
3436	4822 051 30475	4.7MΩ 5% 0.062W 0603
3436	4822 117 12891	220kΩ 1% 0.063W 0603
3437	5322 117 11726	10Ω 5%
3440	4822 051 30103	10kΩ 5% 0.062W
3455	5322 117 11726	10Ω 5%
3461	4822 051 30475	4.7MΩ 5% 0.062W 0603
3461	4822 117 12891	220kΩ 1% 0.063W 0603
3462	5322 117 11726	10Ω 5%
3501	4822 051 30102	1kΩ 5% 0.062W
3501	4822 117 12902	8.2kΩ 1% 0.063W 0603
3502	4822 051 30103	10kΩ 5% 0.062W
3502	4822 051 30472	4.7kΩ 5% 0.062W
3503	4822 051 30102	1kΩ 5% 0.062W
3504	4822 051 30472	4.7kΩ 5% 0.062W
3506	4822 117 12902	8.2kΩ 1% 0.063W 0603
3506	4822 117 12903	1.8kΩ 1% 0.063W 0603
3507	4822 117 13632	100kΩ 1% 0603 0.62W
3508	4822 117 13632	100kΩ 1% 0603 0.62W
3509	4822 051 30181	180Ω 5% 0.062W
3510	4822 117 12864	82kΩ 5% 0.6W
3511	4822 051 30682	6.8kΩ 5% 0.062W
3515	5322 117 11726	10Ω 5%
3518	5322 117 11726	10Ω 5%
3525	4822 117 11449	2.2kΩ 5% 0.1W 0805
3527	4822 117 11449	2.2kΩ 5% 0.1W 0805
3528	4822 051 30102	1kΩ 5% 0.062W
3530	5322 117 11726	10Ω 5%
3536	4822 051 30475	4.7MΩ 5% 0.062W 0603
3536	4822 117 12891	220kΩ 1% 0.063W 0603
3537	5322 117 11726	10Ω 5%
3540	4822 051 30103	10kΩ 5% 0.062W
3555	5322 117 11726	10Ω 5%
3561	4822 051 30475	4.7MΩ 5% 0.062W 0603
3561	4822 117 12891	220kΩ 1% 0.063W 0603
3562	5322 117 11726	10Ω 5%
3601	4822 051 30102	1kΩ 5% 0.062W
3601	4822 117 12902	8.2kΩ 1% 0.063W 0603
3602	4822 051 30103	10kΩ 5% 0.062W
3602	4822 051 30472	4.7kΩ 5% 0.062W
3603	4822 051 30102	1kΩ 5% 0.062W
3604	4822 051 30472	4.7kΩ 5% 0.062W
3606	4822 117 12902	8.2kΩ 1% 0.063W 0603
3606	4822 117 12903	1.8kΩ 1% 0.063W 0603
3607	4822 117 13632	100kΩ 1% 0603 0.62W
3608	4822 117 13632	100kΩ 1% 0603 0.62W
3609	4822 051 30181	180Ω 5% 0.062W
3610	4822 117 12864	82kΩ 5% 0.6W
3611	4822 051 30153	15kΩ 5% 0.062W
3611	4822 051 30223	22kΩ 5% 0.062W
3615	5322 117 11726	10Ω 5%
3618	5322 117 11726	10Ω 5%
3625	4822 117 11449	2.2kΩ 5% 0.1W 0805
3627	4822 117 11449	2.2kΩ 5% 0.1W 0805
3628	4822 051 30102	1kΩ 5% 0.062W
3630	5322 117 11726	10Ω 5%
3636	4822 051 30475	4.7MΩ 5% 0.062W 0603
3636	4822 117 12891	220kΩ 1% 0.063W 0603
3637	5322 117 11726	10Ω 5%
3640	4822 051 30103	10kΩ 5% 0.062W
3655	5322 117 11726	10Ω 5%
3661	4822 051 30475	4.7MΩ 5% 0.062W 0603
3661	4822 117 12891	220kΩ 1% 0.063W 0603
3662	5322 117 11726	10Ω 5%
3732	4822 051 30152	1.5kΩ 5% 0.062W
3732	4822 051 30272	2.7kΩ 5% 0.062W
3733	4822 051 30102	1kΩ 5% 0.062W
3733	4822 051 30221	220Ω 5% 0.062W
3742	4822 051 30152	1.5kΩ 5% 0.062W
3742	4822 051 30272	2.7kΩ 5% 0.062W
3743	4822 051 30102	1kΩ 5% 0.062W
3743	4822 051 30221	220Ω 5% 0.062W
3749	4822 051 30103	10kΩ 5% 0.062W
3750	4822 051 30471	470Ω 5% 0.062W
3751	4822 117 12925	47kΩ 1% 0.063W 0603
3752	4822 117 12925	47kΩ 1% 0.063W 0603
3754	4822 051 30102	1kΩ 5% 0.062W
3755	4822 117 13632	100kΩ 1% 0603 0.62W
3760	4822 051 30471	470Ω 5% 0.062W
3765	4822 117 13632	100kΩ 1% 0603 0.62W
3770	4822 117 13632	100kΩ 1% 0603 0.62W
3771	4822 117 13632	100kΩ 1% 0603 0.62W
3780	4822 117 13632	100kΩ 1% 0603 0.62W
3781	4822 117 13632	100kΩ 1% 0603 0.62W

—∩∩∩—

5335	4822 157 11717	BLM31P500SPT
5360	4822 157 11717	BLM31P500SPT
5365	2422 536 00338	33µH 10% SMD 10mm
5435	4822 157 11717	BLM31P500SPT
5460	4822 157 11717	BLM31P500SPT
5465	2422 536 00338	33µH 10% SMD 10mm
5535	4822 157 11717	BLM31P500SPT
5560	4822 157 11717	BLM31P500SPT
5565	2422 536 00338	33µH 10% SMD 10mm
5635	4822 157 11717	BLM31P500SPT
5660	4822 157 11717	BLM31P500SPT
5665	2422 536 00338	33µH 10% SMD 10mm
5714	4822 157 11717	BLM31P500SPT
5719	4822 157 11717	BLM31P500SPT
5725	4822 157 11717	BLM31P500SPT
5753	2422 549 43769	Bead 30Ω at 100MHz

—▷|—

6328	4822 130 11397	BAS316
6334	4822 130 11148	UDZ4.7B
6335	4822 130 11148	UDZ4.7B
6355	4822 130 11148	UDZ4.7B
6356	4822 130 11148	UDZ4.7B
6359	4822 130 11148	UDZ4.7B
6360	4822 130 11148	UDZ4.7B
6428	4822 130 11397	BAS316
6434	4822 130 11148	UDZ4.7B
6435	4822 130 11148	UDZ4.7B
6455	4822 130 11148	UDZ4.7B
6456	4822 130 11148	UDZ4.7B
6459	4822 130 11148	UDZ4.7B
6460	4822 130 11148	UDZ4.7B
6528	4822 130 11397	BAS316
6534	4822 130 11148	UDZ4.7B
6535	4822 130 11148	UDZ4.7B
6555	4822 130 11148	UDZ4.7B
6556	4822 130 11148	UDZ4.7B
6559	4822 130 11148	UDZ4.7B
6560	4822 130 11148	UDZ4.7B
6628	4822 130 11397	BAS316
6634	4822 130 11148	UDZ4.7B
6635	4822 130 11148	UDZ4.7B
6655	4822 130 11148	UDZ4.7B
6656	4822 130 11148	UDZ4.7B
6659	4822 130 11148	UDZ4.7B
6660	4822 130 11148	UDZ4.7B
6732	4822 130 11551	UDZS10B
6742	4822 130 11551	UDZS10B
6750	4822 130 10328	BAV99W
6760	4822 130 10328	BAV99W

⊗▭

7211	3198 010 42320	BC857BW
7211	5322 130 42756	BC857C
7225	4822 209 30095	LM833D
7238	4822 209 30095	LM833D
7260	4822 209 30095	LM833D
7302	3198 010 42310	BC847BW
7303	3198 010 42310	BC847BW
7315	9338 028 20668	LM311D
7330	4822 130 42804	BC817-25
7340	3198 010 42310	BC847BW
7355	5322 130 60845	BC807-25
7365	9322 161 86668	IRF7343
7402	3198 010 42310	BC847BW
7403	3198 010 42310	BC847BW
7415	9338 028 20668	LM311D
7430	4822 130 42804	BC817-25
7440	3198 010 42310	BC847BW
7455	5322 130 60845	BC807-25
7465	9322 161 86668	IRF7343
7502	3198 010 42310	BC847BW
7503	3198 010 42310	BC847BW
7515	9338 028 20668	LM311D
7530	4822 130 42804	BC817-25
7540	3198 010 42310	BC847BW
7555	5322 130 60845	BC807-25
7565	9322 161 86668	IRF7343
7602	3198 010 42310	BC847BW
7603	3198 010 42310	BC847BW
7615	9338 028 20668	LM311D
7630	4822 130 42804	BC817-25
7640	3198 010 42310	BC847BW
7655	5322 130 60845	BC807-25
7665	9322 161 86668	IRF7343
7735	4822 130 60142	BC869
7735	9322 168 88668	LM317D2T
7736	3198 010 42310	BC847BW
7745	5322 130 61569	BC868
7745	9322 150 89668	LM337D2T
7746	3198 010 42320	BC857BW
7746	5322 130 42756	BC857C
7751	3198 010 42310	BC847BW
7753	3198 010 42320	BC857BW
7753	5322 130 42756	BC857C
7755	3198 010 42310	BC847BW
7761	3198 010 42320	BC857BW
7761	5322 130 42756	BC857C

EMC Filter Panel [EMC]

Various

0002	3122 358 76831	EMC foam fiter panel
1320	2422 025 16545	Connector 10P m
1330	2422 025 16545	Connector 10P m
1345	2422 025 16835	Connector 3P
1355	2422 025 16835	Connector 3P

—||—

2300	5322 126 11583	10nF 10% 50V 0603
2301	5322 126 11583	10nF 10% 50V 0603
2302	3198 016 31020	1nF 10% 25V 0603
2303	5322 126 11583	10nF 10% 50V 0603
2304	5322 126 11583	10nF 10% 50V 0603
2305	5322 126 11583	10nF 10% 50V 0603
2306	5322 126 11583	10nF 10% 50V 0603
2307	5322 126 11583	10nF 10% 50V 0603
2308	5322 126 11583	10nF 10% 50V 0603

—VVV—

3300	4822 051 30101	100Ω 5% 0.062W
3301	4822 051 30101	100Ω 5% 0.062W
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W
3305	4822 051 30101	100Ω 5% 0.062W
3306	4822 051 30101	100Ω 5% 0.062W
3307	4822 051 30101	100Ω 5% 0.062W

—∩∩∩—

5300	2422 549 43062	Bead 600Ω at 100MHz
5301	2422 549 43062	Bead 600Ω at 100MHz
5302	2422 549 43062	Bead 600Ω at 100MHz
5303	2422 549 43062	Bead 600Ω at 100MHz
5304	2422 549 43062	Bead 600Ω at 100MHz
5305	2422 549 43062	Bead 600Ω at 100MHz
5306	2422 549 43062	Bead 600Ω at 100MHz
5307	2422 549 43062	Bead 600Ω at 100MHz
5308	2422 549 43062	Bead 600Ω at 100MHz
5309	2422 549 43062	Bead 600Ω at 100MHz
5310	2422 549 43062	Bead 600Ω at 100MHz
5311	2422 549 43062	Bead 600Ω at 100MHz
5312	2422 549 43062	Bead 600Ω at 100MHz
5313	2422 549 43062	Bead 600Ω at 100MHz

LED/Switch Panel [LD]

Various

0040	3122 128 14292	Mains knob FM24 SL
0044	3122 124 36081	Day light filter
0317	2422 025 13369	Socket 6P (Telephone)
0320	2422 025 16545	Connector 10P m
1101	2422 128 02927	Switch push 2P
1101	4822 276 13483	Switch push 2P 25V h
1320	2422 025 16545	Connector 10P m
8320	3122 358 76521	Cable L20-S20 FM24

—||—

2107	4822 124 12095	100µF 20% 16V
2120	2020 024 90166	10µF 20% 35V
2126	2020 552 96326	220nF 10% 16V

—VVV—

3101	4822 051 30151	150Ω 5% 0.062W

3102	4822 117 13632	100kΩ 1% 0603 0.62W
3103	4822 051 30102	1kΩ 5% 0.062W
3103	4822 051 30221	220Ω 5% 0.062W
3104	4822 117 13632	100kΩ 1% 0603 0.62W
3105	4822 051 30102	1kΩ 5% 0.062W
3105	4822 051 30331	330Ω 5% 0.062W
3106	4822 051 30151	150Ω 5% 0.062W
3107	4822 051 30471	470Ω 5% 0.062W
3108	4822 051 30103	10kΩ 5% 0.062W
3109	4822 051 30101	100Ω 5% 0.062W
3120	4822 051 30472	4.7kΩ 5% 0.062W
3121	4822 051 30472	4.7kΩ 5% 0.062W
3122	4822 051 30102	1kΩ 5% 0.062W
3123	4822 051 30103	10kΩ 5% 0.062W
3124	4822 051 30102	1kΩ 5% 0.062W
3125	4822 051 30332	3.3kΩ 5% 0.062W
3126	4822 051 30474	470kΩ 5% 0.062W
3127	4822 051 30474	470kΩ 5% 0.062W
4101	4822 051 30008	Jumper 0603
4107	4822 051 30008	Jumper 0603

⌇

5100	2422 549 43769	Bead 30Ω at 100MHz

⊳|

6101	4822 130 11564	UDZ3.9B
6103	4822 130 83915	TLMV3100
6105	4822 130 11564	UDZ3.9B
6127	9322 140 63685	TEMD5000

⊗▭

7103	3198 010 42320	BC857BW
7103	5322 130 42756	BC857C
7103	9340 218 50115	BC857BW
7105	3198 010 42320	BC857BW
7105	5322 130 42756	BC857C
7105	9340 218 50115	BC857BW
7107	9322 155 82667	TSOP2236
7107	9322 155 98667	TSOP2236YA1
7107	9322 178 03667	TSOP2136YA1
7120	5322 209 82941	LM358D

Power Supply Panel FM23 AC [P]

Various

0003	3122 128 13822	Shielding frame
0003	3122 128 13913	Mounting kit assy
0006⚠	4822 265 11253	Fuse holder 2p
0008⚠	4822 265 11253	Fuse holder 2p
0010	3122 421 60171	Spring
0011	3122 421 60171	Spring
0015	4822 695 00005	Insulating plate
0016	3122 121 67211	Clip max247
0017	3122 121 67201	Clip large
0018	3122 121 67201	Clip large
0020	3122 121 67191	Clip small
0021	3122 121 67191	Clip small
0022	3122 121 67191	Clip small
0023	3122 121 67191	Clip small
0024	3122 121 67191	Clip small
0025	3122 121 67191	Clip small
0040	2413 015 00065	Cable tie BT18R/4B
0041	3122 124 36011	Thermo foam
0205	3104 308 78231	Transistor cooling clip
0206	3104 308 78231	Transistor cooling clip
0302	2422 025 10769	Connector 9P
0305	2422 025 10772	Connector 12P m
0306	2422 025 08149	Connector 6p m
0307	2422 025 17154	Connector 20P f
0307	2422 025 17759	Connector 20P f
0308⚠	4822 265 20723	Connector 2p m
0319	2422 025 10668	Connector 13P m
0323	2422 025 15085	Connector 10P m
0333	2422 025 12827	Connector 9P m 3.96
0342	4822 267 10618	Connector 7P
0352	4822 267 10618	Connector 7P
0389	4822 267 10735	Connector 3p m
0390	4822 267 10735	Connector 3p m
0392	2422 025 09406	Connector 4p
1004⚠	4822 070 32002	Fuse 2A
1005⚠	4822 071 55002	Fuse T5A 250V
1041	4822 071 55002	Fuse T5A 250V
1042	4822 071 55002	Fuse T5A 250V
1045⚠	4822 071 55002	Fuse T5A 250V
1084⚠	2422 086 10849	Fuse F1A 250V
1084	4822 071 31002	Fuse F1A 250V
1084	9965 000 07788	Fuse T2A 250V
1110⚠	4822 071 55002	Fuse T5A 250V
1200⚠	9965 000 07788	Fuse T2A 250V
1260⚠	2122 662 00107	Fuse RR60-075 A
1400⚠	4822 253 30467	Fuse 6.3A
1401⚠	9965 000 07788	Fuse T2A 250V
1402⚠	4822 252 60151	Sparkgap dsp501
1450⚠	4822 280 10382	SDT-SS-109DM
1460⚠	4822 280 10382	SDT-SS-109DM
8303	3122 358 76301	Tree assy A03-LS left
8304	3122 358 76291	Tree assy A04-LS right

⊣⊢

2000	2020 554 90148	470pF 20% 250V
2001	2222 151 90048	47µF 20% 400V
2001	2222 151 90062	47µF 20% 450V
2002	4822 124 41751	47µF 20% 50V
2003	4822 124 12056	1000µF 20% 35V
2004	2222 464 90017	200pF 2% 630V
2005	4822 121 51288	100pF 630V
2006	3198 016 31020	1nF 10% 25V 0603
2007	2238 586 59812	100nF 20-80% 50V 0603
2007	4822 126 14305	100nF 10% 16V 0603
2008	5322 126 11583	10nF 10% 50V 0603
2009	4822 124 22652	2.2µF 20% 50V
2010	5322 126 11583	10nF 10% 50V 0603
2011	2222 375 90161	18nF 1.6kV 5%
2011	4822 121 70617	10nF 5% 1,6kV
2012	4822 126 11254	330pF 10% 2kV
2012	4822 126 13864	330PF 10% 2KV
2013	4822 126 11254	330pF 10% 2kV
2013	4822 126 13864	330PF 10% 2KV
2014	4822 126 13862	1.5nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	4822 124 22652	2.2µF 20% 50V
2017	4822 121 70617	10nF 5% 1,6kV
2020	2222 056 59222	2200µF 100V 20%
2021	2222 056 59222	2200µF 100V 20%
2022	4822 124 12056	1000µF 20% 35V
2023	2238 586 59812	100nF 20-80% 50V 0603
2023	4822 126 14305	100nF 10% 16V 0603
2024	4822 126 14043	1µF 20% 16V
2024	5322 126 11579	3.3nF 10% 63V
2025	2020 321 90041	180nF 250V 5%
2026	4822 126 14238	2.2nF 50V 0603
2027	3198 017 31530	15nF 20% 50V 0603
2028	2238 930 11541	220pF 5% 200V
2028	4822 126 13883	220pF 5% 50V
2029	4822 126 13883	220pF 5% 50V
2030	2238 586 59812	100nF 20-80% 50V 0603
2030	4822 126 14305	100nF 10% 16V 0603
2032	2238 916 15641	22nF 10% 25V 0603
2032	4822 126 14494	22nF 10% 25V 0603
2033	2238 586 59812	100nF 20-80% 50V 0603
2033	4822 126 14305	100nF 10% 16V 0603
2034	4822 126 11979	27pF 5% 2KV
2035	2238 586 15623	1nF 10% 50V 0603
2036	2238 916 15641	22nF 10% 25V 0603
2036	4822 126 14494	22nF 10% 25V 0603
2038	3198 016 31020	1nF 10% 25V 0603
2040	2238 586 59812	100nF 20-80% 50V 0603
2040	4822 126 14305	100nF 10% 16V 0603
2041	4822 126 13883	220pF 5% 50V
2042	4822 126 13883	220pF 5% 50V
2043	2020 021 91543	47µF 20% 160V
2043	2222 056 59222	2200µF 100V 20%
2044	2238 930 11541	220pF 5% 200V
2044	4822 126 13883	220pF 5% 50V
2045	4822 126 13883	220pF 5% 50V
2050	2238 586 59812	100nF 20-80% 50V 0603
2050	4822 126 14305	100nF 10% 16V 0603
2054	2020 552 94427	100pF 5% 50v 0603
2054	2238 606 11536	100pF 5% 100V
2054	4822 122 31765	100pF 2% 63V
2055	2238 606 11547	680pF 5% 680V
2055	3198 016 31020	1nF 10% 25V 0603
2058	4822 124 40756	1µF20% 100V
2059	2238 586 59812	100nF 20-80% 50V 0603
2059	4822 126 14305	100nF 10% 16V 0603
2061	2238 586 59812	100nF 20-80% 50V 0603
2061	4822 126 14305	100nF 10% 16V 0603
2090	4822 124 40196	220µF 20% 16V
2090	4822 124 40769	4.7µF 20% 100V
2111	4822 126 13883	220pF 5% 50V
2112	3198 016 31020	1nF 10% 25V 0603
2113	2020 012 93505	10µF 20% 25V
2113	4822 124 12379	220µF 25V
2113	4822 124 80144	220µF 20% 25V
2113	4822 124 80195	470µF 20% 10V
2113	4822 124 80875	220µF 20% 25V
2114	4822 126 13473	220nF 80-20% 50V
2117	2222 780 15656	330nF 10% 16V
2117	4822 126 12102	330nF 10% 16V 0805
2118	4822 126 11382	1nF 10% 1kV
2118	4822 126 13449	1nF 10% 2KV
2121	2222 056 59222	2200µF 100V 20%
2122	4822 121 51319	1µF 10% 63V
2123	4822 126 14043	1µF 20% 16V
2123	5322 126 11579	3.3nF 10% 63V
2126	2238 586 59812	100nF 20-80% 50V 0603
2126	4822 126 14305	100nF 10% 16V 0603
2133	3198 029 32290	22µF 20% 25V
2137	4822 126 14305	100nF 10% 16V 0603
2138	4822 124 21913	1µF 20% 63V
2203	2238 586 59812	100nF 20-80% 50V 0603
2203	4822 126 14305	100nF 10% 16V 0603
2205	2020 552 95447	2.2µF 20% 16V
2205	3198 032 64090	2.2µF 20% 25V
2210	4822 124 40433	47µF 20% 25V
2211	4822 126 13883	220pF 5% 50V
2212	2238 586 59812	100nF 20-80% 50V 0603
2212	4822 126 13879	220nF 20% 16V
2212	4822 126 14305	100nF 10% 16V 0603
2217	2222 780 15656	330nF 10% 16V
2217	4822 126 12102	330nF 10% 16V 0805
2218	2020 558 90609	4.7nF 10% 1kV
2218	2222 375 90141	3.3nF 1.6kV 5%
2219	2020 021 91543	47µF 20% 160V
2219	2222 151 90048	47µF 20% 400V
2222	2020 552 94427	100pF 5% 50v 0603
2222	4822 122 31765	100pF 2% 63V
2223	2020 552 94427	100pF 5% 50v 0603
2223	4822 122 31765	100pF 2% 63V
2224	2020 021 91551	2200µF 20% 25V
2225	2020 021 91551	2200µF 20% 25V
2226	2238 586 59812	100nF 20-80% 50V 0603
2226	4822 126 14305	100nF 10% 16V 0603
2227	2020 552 94427	100pF 5% 50v 0603
2227	4822 122 31765	100pF 2% 63V
2228	2020 021 91411	1000µF 20% 35V
2230	5322 121 10472	47µF
2231	5322 121 10472	47µF
2232	2020 552 94427	100pF 5% 50v 0603
2232	4822 122 31765	100pF 2% 63V
2260	4822 126 14043	1µF 20% 16V
2261	2020 021 91411	1000µF 20% 35V
2262	4822 126 13473	220nF 80-20% 50V
2263	2222 861 15272	2.7nF 5% 50V 0805
2264	4822 121 51252	470nF 5% 63V
2264	4822 126 13482	470nF 80-20% 16V
2265	4822 126 14241	330pF 50V 0603
2266	2238 916 15641	22nF 10% 25V 0603
2266	4822 126 14494	22nF 10% 25V 0603
2267	5322 126 10223	4.7nF 10% 63V
2268	4822 126 13473	220nF 80-20% 50V
2269	2020 021 91524	220µF 20% 25V
2270	4822 124 40433	47µF 20% 25V
2290	5322 126 11583	10nF 10% 50V 0603
2291	4822 126 13883	220pF 5% 50V
2292	2020 021 91354	1000µF 20% 50V
2293	4822 126 13883	220pF 5% 50V
2294	2020 021 91354	1000µF 20% 50V
2303	4822 121 42408	220nF 10% 50V
2304	2238 586 59812	100nF 20-80% 50V 0603
2304	3198 016 31020	1nF 10% 25V 0603
2304	4822 126 14305	100nF 10% 16V 0603
2305	2238 586 59812	100nF 20-80% 50V 0603
2305	4822 126 14305	100nF 10% 16V 0603
2306	2238 586 59812	100nF 20-80% 50V 0603
2306	4822 126 14305	100nF 10% 16V 0603
2316	2238 586 59812	100nF 20-80% 50V 0603
2322	2238 586 59812	100nF 20-80% 50V 0603
2322	4822 126 14305	100nF 10% 16V 0603
2324	2238 586 59812	100nF 20-80% 50V 0603
2324	4822 126 14305	100nF 10% 16V 0603
2343	4822 124 22652	2.2µF 20% 50V
2350	4822 124 40207	100µF 20% 25V
2352	2238 586 59812	100nF 20-80% 50V 0603
2352	4822 126 14305	100nF 10% 16V 0603
2364	2238 586 59812	100nF 20-80% 50V 0603
2364	4822 126 14305	100nF 10% 16V 0603
2366	4822 126 14585	100nF 10% 50V
2370	2238 586 59812	100nF 20-80% 50V 0603
2370	4822 126 14305	100nF 10% 16V 0603
2376	2238 586 59812	100nF 20-80% 50V 0603
2376	4822 126 14305	100nF 10% 16V 0603
2380	2238 586 59812	100nF 20-80% 50V 0603
2380	3198 016 31020	1nF 10% 25V 0603
2381	2238 586 59812	100nF 20-80% 50V 0603
2381	4822 126 14305	100nF 10% 16V 0603
2382	3198 016 31020	1nF 10% 25V 0603
2385	3198 017 41050	1µF 10V 0603
2393	2238 586 59812	100nF 20-80% 50V 0603
2393	4822 126 14305	100nF 10% 16V 0603
2396	4822 121 42408	220nF 10% 50V
2400	4822 126 13589	470nF 275V

2401	4822 121 10512	275V 220N 20%
2401	4822 126 13589	470nF 275V
2402	2020 554 90148	470pF 20% 250V
2403	2020 554 90148	470pF 20% 250V
2404	4822 126 14525	47pF 5% 1kV
2405	2020 554 90148	470pF 20% 250V
2405	4822 126 13841	1nF 20% 250V
2406	4822 126 14525	47pF 5% 1kV
2407	2020 554 90148	470pF 20% 250V
2465	4822 124 40207	100µF 20% 25V
2503	2222 151 90061	22µF 20% 450V
2503	2222 151 90062	47µF 20% 450V
2504	5322 126 11578	1nF 10% 50V 0603
2505	2020 021 91354	1000µF 20% 50V
2505	3198 028 44790	47µF 20% 35V
2507	2020 552 94427	100pF 5% 50v 0603
2507	4822 122 31765	100pF 2% 63V
2508	4822 124 12032	4.7µF 20% 50V
2509	2020 552 94427	100pF 5% 50v 0603
2509	4822 122 31765	100pF 2% 63V
2510	4822 124 81145	1000µF 16V 20%
2511	2238 586 59812	100nF 20-80% 50V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	2238 586 59812	100nF 20-80% 50V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2513	2238 586 59812	100nF 20-80% 50V 0603
2513	4822 126 14305	100nF 10% 16V 0603
2530	4822 124 40207	100µF 20% 25V
2530	5322 124 40641	10µF 20% 100V
2532	4822 124 40207	100µF 20% 25V
2533	4822 124 40207	100µF 20% 25V
2540	4822 124 40207	100µF 20% 25V
2541	4822 124 40207	100µF 20% 25V
2600	4822 122 33799	1nF 10% 1kV
2601	4822 122 33799	1nF 10% 1kV
2605	2222 479 90086	1µF 400V 5%
2608	3198 016 31020	1nF 10% 25V 0603
2610	4822 121 70581	1.5nF 5% 2kV
2612	5322 126 11578	1nF 10% 50V 0603
2613	5322 126 11578	1nF 10% 50V 0603
2616	2222 157 57331	330UF 30X50 450V
2640	4822 126 13881	470pF 5% 50V
2641	3198 016 31020	1nF 10% 25V 0603
2642	3198 016 31020	1nF 10% 25V 0603
2651	5322 126 11583	10nF 10% 50V 0603
2653	4822 126 14241	330pF 50V 0603
2654	4822 124 40433	47µF 20% 25V
2655	2238 780 15654	220nF 10% 16V
2655	4822 121 51319	1µF 10% 63V
2656	2238 586 59812	100nF 20-80% 50V 0603
2656	4822 126 14305	100nF 10% 16V 0603
2662	4822 124 80061	1000µF 20% 25V
2663	4822 124 40207	100µF 20% 25V
2664	4822 124 40207	100µF 20% 25V
2665	4822 126 13881	470pF 5% 50V
2666	4822 126 13193	4.7nF 10% 63V
2670	2238 586 59812	100nF 20-80% 50V 0603
2670	4822 126 14305	100nF 10% 16V 0603
2671	2238 586 59812	100nF 20-80% 50V 0603
2671	3198 017 34730	47nF 16V 0603
2671	4822 126 14305	100nF 10% 16V 0603
2672	2238 586 59812	100nF 20-80% 50V 0603
2672	4822 126 14305	100nF 10% 16V 0603
2673	4822 121 43343	4.7nF 10% 400V
2674	4822 121 41664	22nF 10% 400V
2700	4822 124 80791	470µF 20% 16V
2701	5322 126 11583	10nF 10% 50V 0603
2703	4822 124 80791	470µF 20% 16V
2707	5322 126 11583	10nF 10% 50V 0603
2709	4822 124 80791	470µF 20% 16V

—WW—

3003	4822 117 13632	100kΩ 1% 0603 0.62W
3004	4822 051 30153	15kΩ 5% 0.062W
3005	4822 051 20393	39kΩ 5% 0.1W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 20472	4.7kΩ 5% 0.1W
3007	4822 051 30472	4.7kΩ 5% 0.062W
3008	4822 051 30102	1kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3010	4822 051 30153	15kΩ 5% 0.062W
3011	4822 051 30561	560Ω 5% 0.062W
3012	4822 051 20472	4.7kΩ 5% 0.1W
3012	4822 051 30472	4.7kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014	4822 116 52191	33Ω 5% 0.5W
3015	4822 116 52176	10Ω 5% 0.5W
3016	4822 051 30102	1kΩ 5% 0.062W
3017	4822 116 52191	33Ω 5% 0.5W
3018	4822 116 52176	10Ω 5% 0.5W
3019	4822 051 30102	1kΩ 5% 0.062W
3020	4822 051 30563	56kΩ 5% 0.062W
3021	4822 053 11688	6.8Ω 5% 2W
3022	4822 051 30331	330Ω 5% 0.062W
3023	4822 117 12902	8.2kΩ 1% 0.063W 0603
3023	4822 117 12925	47kΩ 1% 0.063W 0603
3024	4822 050 27503	75kΩ 1% 0,6W
3025	4822 117 12903	1.8kΩ 1% 0.063W 0603
3026	4822 101 11186	470Ω 30% 0.1W
3026	4822 101 11383	470Ω 30% LIN
3027	4822 117 12925	47kΩ 1% 0.063W 0603
3028	4822 117 10362	7.5kΩ 1% 0,1W
3029	4822 051 30102	1kΩ 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	2322 704 61103	11kΩ 1% 0603
3032	2322 704 61103	11kΩ 1% 0603
3033	4822 051 30222	2.2kΩ 5% 0.062W
3037	4822 051 30103	10kΩ 5% 0.062W
3038	4822 117 13632	100kΩ 1% 0603 0.62W
3039	4822 051 30105	1MΩ 5% 0.062W
3040	4822 117 10837	100kΩ 1% 0.1W
3041	4822 051 30333	33kΩ 5% 0.062W
3042	4822 051 30471	470Ω 5% 0.062W
3043	4822 051 20472	4.7kΩ 5% 0.1W
3043	4822 051 30472	4.7kΩ 5% 0.062W
3044	4822 051 30102	1kΩ 5% 0.062W
3045	4822 051 30102	1kΩ 5% 0.062W
3046	4822 053 20565	5.6MΩ 5% 0.25W
3047	4822 051 30154	150kΩ 5% 0.062W
3048	4822 051 20472	4.7kΩ 5% 0.1W
3048	4822 051 30472	4.7kΩ 5% 0.062W
3049	4822 051 30123	12kΩ 5% 0.062W
3050⚠	4822 052 10398	3.9Ω 5% 0,33W
3051	4822 051 20399	39Ω 5% 0.1W
3052	2322 662 93135	100Ω PTC 500V
3053	2322 662 93131	10Ω PTC
3053	2322 662 93135	100Ω PTC 500V
3054	4822 050 21003	10kΩ 1% 0.6W
3056	4822 051 30331	330Ω 5% 0.062W
3057	4822 051 30101	100Ω 5% 0.062W
3057	4822 051 30331	330Ω 5% 0.062W
3058	2322 730 61224	220kΩ 5% 0.062W 0805
3058	4822 051 20105	1MΩ 5% 0.1W
3061	4822 117 12925	47kΩ 1% 0.063W 0603
3062	4822 051 30102	1kΩ 5% 0.062W
3064	4822 051 30103	10kΩ 5% 0.062W
3065	4822 051 30102	1kΩ 5% 0.062W
3066	4822 051 30103	10kΩ 5% 0.062W
3067	4822 051 30153	15kΩ 5% 0.062W
3070	4822 051 30103	10kΩ 5% 0.062W
3071	4822 117 12925	47kΩ 1% 0.063W 0603
3075	4822 116 83866	1MΩ 5% 0.5W
3076	4822 117 13632	100kΩ 1% 0603 0.62W
3077	4822 116 83866	1MΩ 5% 0.5W
3078	4822 117 13632	100kΩ 1% 0603 0.62W
3080	4822 051 30101	100Ω 5% 0.062W
3081	4822 051 30222	2.2kΩ 5% 0.062W
3082	4822 051 30103	10kΩ 5% 0.062W
3083	4822 051 10102	1kΩ 2% 0.25W
3084	4822 051 30103	10kΩ 5% 0.062W
3085	4822 117 12925	47kΩ 1% 0.063W 0603
3086	4822 117 12925	47kΩ 1% 0.063W 0603
3087	4822 117 12925	47kΩ 1% 0.063W 0603
3088	4822 117 12925	47kΩ 1% 0.063W 0603
3090	4822 051 30101	100Ω 5% 0.062W
3090	4822 051 30471	470Ω 5% 0.062W
3091	4822 051 30102	1kΩ 5% 0.062W
3092	4822 051 30471	470Ω 5% 0.062W
3092	4822 051 30472	4.7kΩ 5% 0.062W
3093	4822 051 30102	1kΩ 5% 0.062W
3095	4822 051 30471	470Ω 5% 0.062W
3096	4822 051 30562	5.6kΩ 5% 0.063W 0603
3097	4822 117 12968	820Ω 5% 0.62W
3110	4822 051 30102	1kΩ 5% 0.062W
3111	4822 051 30102	1kΩ 5% 0.062W
3112	4822 051 30102	1kΩ 5% 0.062W
3113	4822 051 30474	470kΩ 5% 0.062W
3114	4822 051 20564	560kΩ 5% 0.1W
3115	4822 117 12891	220kΩ 1% 0.063W 0603
3116	4822 051 30102	1kΩ 5% 0.062W
3117	4822 051 30103	10kΩ 5% 0.062W
3118	4822 116 83303	0.1Ω 2W
3119	4822 116 83303	0.1Ω 2W
3120	4822 051 30331	330Ω 5% 0.062W
3120	4822 117 12903	1.8kΩ 1% 0.063W 0603
3121	4822 117 12902	8.2kΩ 1% 0.063W 0603
3121	4822 117 12925	47kΩ 1% 0.063W 0603
3122	2322 734 67503	75kΩ 1% 0.062W 0805
3123	4822 117 10965	18kΩ 1% 0.1W
3124	2120 108 94004	7.5kΩ 1% 0603
3125	2120 108 94004	7.5kΩ 1% 0603
3126	4822 051 30222	2.2kΩ 5% 0.062W
3127	4822 101 11187	1kΩ 30% 0,1W
3128	4822 051 30333	33kΩ 5% 0.062W
3129	4822 053 10103	10kΩ 5% 1W
3130	4822 051 30102	1kΩ 5% 0.062W
3131	2322 704 61103	11kΩ 1% 0603
3132	4822 051 30103	10kΩ 5% 0.062W
3133	4822 051 30101	100Ω 5% 0.062W
3133	4822 051 30331	330Ω 5% 0.062W
3134	4822 051 30331	330Ω 5% 0.062W
3135	4822 117 12925	47kΩ 1% 0.063W 0603
3136	4822 117 12925	47kΩ 1% 0.063W 0603
3137	4822 117 12925	47kΩ 1% 0.063W 0603
3138	4822 117 11503	220Ω 1% 0.1W
3139	4822 117 11503	220Ω 1% 0.1W
3140	2322 734 67503	75kΩ 1% 0.062W 0805
3141	2322 734 67503	75kΩ 1% 0.062W 0805
3142	5322 117 12487	1kΩ 1% 0.125W
3143	4822 053 11472	4kΩ 5% 2W
3146	2306 327 90035	Jump. 0.22Ω
3147	2322 704 61103	11kΩ 1% 0603
3200	2322 730 61224	220kΩ 5% 0.062W 0805
3201	4822 053 10103	10kΩ 5% 1W
3202	4822 051 30479	47Ω 5% 0.062W
3203	4822 051 30101	100Ω 5% 0.062W
3204	4822 117 13632	100kΩ 1% 0603 0.62W
3205	4822 117 13632	100kΩ 1% 0603 0.62W
3212	4822 051 30102	1kΩ 5% 0.062W
3213	4822 051 30105	1MΩ 5% 0.062W
3214	4822 117 12889	270kΩ 1% 0.063W 0603
3216	4822 051 30102	1kΩ 5% 0.062W
3217	4822 051 30103	10kΩ 5% 0.062W
3218	4822 116 83303	0.1Ω 2W
3219	4822 116 83303	0.1Ω 2W
3224	5322 117 13028	12kΩ 1% 0.063W 0603
3225	2322 704 61103	11kΩ 1% 0603
3226	4822 051 30103	10kΩ 5% 0.062W
3228	4822 051 30151	150Ω 5% 0.062W
3240	4822 051 30102	1kΩ 5% 0.062W
3241	4822 051 30102	1kΩ 5% 0.062W
3260	4822 051 30102	1kΩ 5% 0.062W
3261	4822 051 30102	1kΩ 5% 0.062W
3262	4822 117 11188	20kΩ 1% 0,1W
3264	4822 051 30682	6.8kΩ 5% 0.062W
3265	4822 051 30102	1kΩ 5% 0.062W
3268	4822 051 30102	1kΩ 5% 0.062W
3268	4822 117 13632	100kΩ 1% 0603 0.62W
3292	4822 051 30561	560Ω 5% 0.062W
3300	4822 117 13579	220kΩ 1% 0.1W 0805
3301	4822 117 13579	220kΩ 1% 0.1W 0805
3302	2312 916 71004	100kΩ 1%
3302	4822 117 13579	220kΩ 1% 0.1W 0805
3302	8222 676 14191	100kΩ 1% 0.062W 0805
3303	2312 916 71004	100kΩ 1%
3303	4822 117 13579	220kΩ 1% 0.1W 0805
3303	8222 676 14201	57kΩ 1% 0.062W 0805
3304	4822 051 30102	1kΩ 5% 0.062W
3305	2312 916 76202	6.2kΩ 1%
3305	2322 704 61103	11kΩ 1% 0603
3305	4822 051 30008	Jumper 0603
3306	2322 704 61103	11kΩ 1% 0603
3307	2322 704 61103	11kΩ 1% 0603
3307	5322 117 13028	12kΩ 1% 0.063W 0603
3308	4822 051 30102	1kΩ 5% 0.062W
3309	4822 051 30102	1kΩ 5% 0.062W
3310	4822 051 30472	4.7kΩ 5% 0.062W
3311	4822 117 13579	220kΩ 1% 0.1W 0805
3312	4822 051 30102	1kΩ 5% 0.062W
3313	2120 108 94004	7.5kΩ 1% 0603
3313	2322 704 61103	11kΩ 1% 0603
3313	4822 117 11188	20kΩ 1% 0,1W
3314	2120 108 94004	7.5kΩ 1% 0603
3315	5322 117 12487	1kΩ 1% 0.125W
3316	2312 916 77502	7.5kΩ 1%
3316	4822 117 11596	390Ω 1% 0.1W
3317	2120 108 94004	7.5kΩ 1% 0603
3318	4822 051 30102	1kΩ 5% 0.062W
3319	4822 051 30472	4.7kΩ 5% 0.062W
3320	2322 704 61103	11kΩ 1% 0603
3320	4822 117 10833	10kΩ 1% 0.1W
3321	4822 051 30102	1kΩ 5% 0.062W
3322	4822 117 10833	10kΩ 1% 0.1W
3322	5322 117 13042	3.9kΩ 1% 0.063W 0603
3323	4822 117 10833	10kΩ 1% 0.1W
3323	5322 117 13028	12kΩ 1% 0.063W 0603
3324	4822 051 30102	1kΩ 5% 0.062W
3325	4822 051 30471	470Ω 5% 0.062W
3326	4822 051 30472	4.7kΩ 5% 0.062W
3327	4822 051 30103	10kΩ 5% 0.062W
3328	4822 051 30103	10kΩ 5% 0.062W
3330	4822 051 30102	1kΩ 5% 0.062W
3331	4822 051 30472	4.7kΩ 5% 0.062W
3332	4822 117 11144	3.9kΩ 1% 0.1W
3333	4822 051 30102	1kΩ 5% 0.062W
3334	4822 117 12955	2.7kΩ 1% 0.1W 0805
3335	4822 116 83933	15kΩ 1% 0.1W
3338	4822 051 30102	1kΩ 5% 0.062W
3339	4822 051 30472	4.7kΩ 5% 0.062W

3340	4822 051 30102	1kΩ 5% 0.062W
3341	4822 051 30103	10kΩ 5% 0.062W
3342	4822 051 30103	10kΩ 5% 0.062W
3343	4822 051 30102	1kΩ 5% 0.062W
3344	4822 051 30102	1kΩ 5% 0.062W
3345	4822 051 30472	4.7kΩ 5% 0.062W
3346	4822 051 30102	1kΩ 5% 0.062W
3347	4822 051 30331	330Ω 5% 0.062W
3348	4822 051 30331	330Ω 5% 0.062W
3349	4822 051 30102	1kΩ 5% 0.062W
3350	4822 051 30472	4.7kΩ 5% 0.062W
3351	4822 051 30103	10kΩ 5% 0.062W
3352	4822 051 30103	10kΩ 5% 0.062W
3353	4822 051 30103	10kΩ 5% 0.062W
3354	4822 051 30472	4.7kΩ 5% 0.062W
3358	4822 051 30222	2.2kΩ 5% 0.062W
3359	4822 051 30472	4.7kΩ 5% 0.062W
3360	4822 117 11817	1.2kΩ 1% 1/16W
3361	4822 051 30472	4.7kΩ 5% 0.062W
3362	4822 051 30102	1kΩ 5% 0.062W
3363	4822 051 30102	1kΩ 5% 0.062W
3364	4822 051 30102	1kΩ 5% 0.062W
3365	4822 051 30102	1kΩ 5% 0.062W
3366	4822 051 30103	10kΩ 5% 0.062W
3367	4822 051 30103	10kΩ 5% 0.062W
3368	2120 660 90042	PTC 330Ω 16V
3369	4822 051 30272	2.7kΩ 5% 0.062W
3370	4822 051 30101	100Ω 5% 0.062W
3371	4822 051 30101	100Ω 5% 0.062W
3372	9337 224 50116	Temp sens. KTY81-210
3372	9337 224 60116	Temp sens. KTY81-220
3373	4822 051 30103	10kΩ 5% 0.062W
3373	4822 051 30472	4.7kΩ 5% 0.062W
3374	4822 117 12925	47kΩ 1% 0.063W 0603
3375	4822 117 12925	47kΩ 1% 0.063W 0603
3376	4822 117 12925	47kΩ 1% 0.063W 0603
3377	4822 051 30103	10kΩ 5% 0.062W
3377	4822 051 30472	4.7kΩ 5% 0.062W
3378	4822 051 30103	10kΩ 5% 0.062W
3378	4822 117 12925	47kΩ 1% 0.063W 0603
3380	4822 117 12925	47kΩ 1% 0.063W 0603
3381	4822 117 12925	47kΩ 1% 0.063W 0603
3382	4822 117 11449	2.2kΩ 5% 0.1W 0805
3382	4822 117 12955	2.7kΩ 1% 0.1W 0805
3382	5322 117 13039	222kΩ 1% 0.063W 0603
3382	8222 676 14211	4.75kΩ 1% 0.062W 0805
3383	4822 051 30471	470Ω 5% 0.062W
3384	4822 051 30471	470Ω 5% 0.062W
3385	4822 117 13632	100kΩ 1% 0603 0.62W
3386	4822 117 13632	100kΩ 1% 0603 0.62W
3387	4822 051 30471	470Ω 5% 0.062W
3388	4822 051 30102	1kΩ 5% 0.062W
3389	4822 051 30102	1kΩ 5% 0.062W
3390	4822 051 30102	1kΩ 5% 0.062W
3390	4822 051 30103	10kΩ 5% 0.062W
3391	4822 051 30103	10kΩ 5% 0.062W
3392	4822 051 30102	1kΩ 5% 0.062W
3393	4822 051 30102	1kΩ 5% 0.062W
3393	4822 051 30103	10kΩ 5% 0.062W
3394	4822 051 30102	1kΩ 5% 0.062W
3395	4822 051 30103	10kΩ 5% 0.062W
3396	2312 916 71004	100kΩ 1%
3397	2312 916 71004	100kΩ 1%
3400	2322 595 90021	VDR 1mA/495V 850V
3401	4822 117 10118	1MΩ 5% 0,5W
3402	4822 053 21475	4.7MΩ 5% 0,5W
3403	4822 053 21475	4.7MΩ 5% 0,5W
3404	4822 116 83872	220Ω 5% 0.5W
3450	2322 662 93131	10Ω PTC
3451	2322 662 93131	10Ω PTC
3452	2122 612 00051	NTC 1Ω 20%
3460	4822 051 30472	4.7kΩ 5% 0.062W
3461	4822 051 30103	10kΩ 5% 0.062W
3463	4822 051 30103	10kΩ 5% 0.062W
3465	4822 051 30103	10kΩ 5% 0.062W
3467	4822 051 30103	10kΩ 5% 0.062W
3469	4822 051 30472	4.7kΩ 5% 0.062W
3470	4822 051 30103	10kΩ 5% 0.062W
3501	4822 051 30101	100Ω 5% 0.062W
3502	4822 051 30471	470Ω 5% 0.062W
3503	5322 117 13026	4.7kΩ 1% 0.063W 0603
3503	5322 117 13042	3.9kΩ 1% 0.063W 0603
3504	5322 117 13024	33kΩ 1% 0.063W 0603
3505	4822 117 11139	1.5kΩ 1% 0.1W
3505	5322 117 13034	1.5kΩ 1% 0.063W 0603
3506	2322 662 93131	10Ω PTC
3507	4822 053 20225	2.2MΩ 5% 0.25W
3508	2322 194 63109	10Ω 5% 2W
3520	4822 051 30102	1kΩ 5% 0.062W
3520	4822 051 30109	10Ω 5% 0.062W
3530	4822 117 13632	100kΩ 1% 0603 0.62W
3608	4822 116 52179	12Ω 5% 0,5W
3610	5322 116 53564	3.3Ω 5% 0.5W
3611	4822 050 11002	1kΩ 1% 0.4W
3613	2120 106 90565	0.1Ω 5% 1W
3614	2120 106 90565	0.1Ω 5% 1W
3614	2120 106 90639	0.12Ω 5% 1W
3615	2120 106 90639	0.12Ω 5% 1W
3639	4822 051 30102	1kΩ 5% 0.062W
3640	4822 051 30331	330Ω 5% 0.062W
3641	4822 051 30471	470Ω 5% 0.062W
3642	4822 051 30101	100Ω 5% 0.062W
3650	2322 156 21305	1.3MΩ 1% 0,25W
3651	4822 051 30103	10kΩ 5% 0.062W
3651	4822 051 30472	4.7kΩ 5% 0.062W
3652	4822 051 30105	1MΩ 5% 0.062W
3653	4822 116 52231	820Ω 5% 0.5W
3654	4822 051 30103	10kΩ 5% 0.062W
3655	4822 051 30102	1kΩ 5% 0.062W
3663	4822 052 10108	1Ω 5% 0.33W
3664	4822 117 13579	220kΩ 1% 0.1W 0805
3665	4822 051 30103	10kΩ 5% 0.062W
3666	4822 116 52175	100Ω 5% 0.5W
3667	4822 051 30103	10kΩ 5% 0.062W
3668	4822 052 11102	1kΩ 5% 0,5W
3670	4822 050 27504	750kΩ 1% 0,6W
3671	4822 117 10833	10kΩ 1% 0.1W
3673	4822 052 11102	1kΩ 5% 0,5W
3674	4822 053 20105	1MΩ 5% 0,25W
3675	4822 053 10221	220Ω 5% 1W
3676	4822 053 10471	470Ω 5% 1W
3700	4822 051 30102	1kΩ 5% 0.062W
3700	4822 051 30331	330Ω 5% 0.062W
3701	4822 051 30102	1kΩ 5% 0.062W
3701	4822 051 30222	2.2kΩ 5% 0.062W
3702	4822 051 30102	1kΩ 5% 0.062W
3702	4822 051 30222	2.2kΩ 5% 0.062W
3703	4822 051 30101	100Ω 5% 0.062W
3703	4822 051 30102	1kΩ 5% 0.062W
3706	4822 051 30102	1kΩ 5% 0.062W
3706	4822 051 30331	330Ω 5% 0.062W
3707	4822 051 30102	1kΩ 5% 0.062W
3707	4822 051 30222	2.2kΩ 5% 0.062W
3708	4822 051 30102	1kΩ 5% 0.062W
3708	4822 051 30222	2.2kΩ 5% 0.062W
3709	4822 051 30101	100Ω 5% 0.062W
3709	4822 051 30102	1kΩ 5% 0.062W
3999	4822 051 30102	1kΩ 5% 0.062W
4268	4822 051 30008	Jumper 0603

⏦

5001	3128 138 38561	Transformer CE136H
5001	8222 289 53691	Driver transf. CE136H
5002⚠	3128 138 40371	Transformer CE423D
5003	4822 157 71442	150µH 10%
5120	3128 138 40381	Inductor Coil CU20V
5200	3198 018 71010	100µF 10%
5213	2422 264 00433	Loudspeaker 8Ω 15W
5214	2422 264 00433	Loudspeaker 8Ω 15W
5215	2422 264 00432	Tweeter 8Ω 15W R49
5216	2422 264 00432	Tweeter 8Ω 15W R49
5220	3128 138 70541	Transformer CT296F
5224	2422 535 95273	6.8µH 20%
5225	2422 535 95273	6.8µH 20%
5260	3198 018 71010	100µF 10%
5268	2422 536 00288	100µH 10%
5290	3128 138 40391	Transformer CU15
5291	4822 157 71467	39µH 10%
5292	4822 157 71467	39µH 10%
5293	4822 157 71467	39µH 10%
5401⚠	3122 138 38901	Mains filter CU28D3
5402⚠	3122 138 38901	Mains filter CU28D3
5500⚠	3128 138 40361	Transformer CE165T
5505	4822 157 71467	39µH 10%
5600	3128 138 40351	Coil CE423D
5612	4822 157 11411	Bead 83Ω at 100MHz
5703	4822 157 71414	1000µH 10%
5704	4822 157 11499	BLM11P600SPT
5709	4822 157 71414	1000µH 10%
5710	4822 157 11499	BLM11P600SPT

⊳|

6004	4822 130 11397	BAS316
6005	4822 130 11397	BAS316
6007	4822 130 30621	1N4148
6008	4822 130 30621	1N4148
6009	4822 130 11397	BAS316
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	4822 130 34281	BZX79-B15
6013	4822 130 34281	BZX79-B15
6018	4822 130 11397	BAS316
6019	4822 130 11397	BAS316
6021	4822 130 32961	BYV28-200
6021	9340 550 66112	BYV28-200/24
6022	4822 130 11397	BAS316
6023	4822 130 11397	BAS316
6027	4822 130 30621	1N4148
6028	4822 130 30621	1N4148
6031	9322 129 37685	BZM55-C5V6
6032	9322 129 37685	BZM55-C5V6
6033	4822 130 11594	BZX284-C47
6034	4822 130 11397	BAS316
6035	4822 130 11397	BAS316
6041	9322 167 08687	STTH2003CF
6042	9322 150 18685	BZX384-C47
6044	9322 167 08687	STTH2003CF
6045	4822 130 32961	BYV28-200
6045	9340 550 66112	BYV28-200/24
6050	4822 130 31024	BZX79-B18
6053	4822 130 42488	BYD33D
6054	4822 130 42488	BYD33D
6055	4822 130 42488	BYD33D
6061	4822 130 31024	BZX79-B18
6075	9336 018 60133	BZT03-C300
6077	9336 018 60133	BZT03-C300
6082	4822 130 11397	BAS316
6086	4822 130 83757	BAS216
6095	4822 130 11397	BAS316
6111	4822 130 11397	BAS316
6112	4822 130 11397	BAS316
6113	4822 130 11397	BAS316
6117	4822 130 11152	UDZ18B
6120	4822 130 11596	BYW29EX-200
6123	4822 130 11397	BAS316
6132	4822 130 11397	BAS316
6133	4822 130 11397	BAS316
6142	4822 130 42488	BYD33D
6142	9340 550 66112	BYV28-200/24
6202	4822 130 11397	BAS316
6205	4822 130 11152	UDZ18B
6206	4822 130 11397	BAS316
6211	9322 128 65685	RS1G
6213	4822 130 11397	BAS316
6216	4822 130 11152	UDZ18B
6224	9322 164 40682	STPS20L40CF
6224	9322 173 47687	STPS20L40CFP
6225	9322 164 40682	STPS20L40CF
6225	9322 173 47687	STPS20L40CFP
6230	4822 130 42488	BYD33D
6230	5322 130 31938	BYV27-200
6230	9340 550 66112	BYV28-200/24
6232	4822 130 11522	UDZ15B
6260	4822 130 11421	BT151X-500R
6267	9322 161 77682	SB540L-7024
6290	4822 130 11596	BYW29EX-200
6291	9322 131 78682	D4SBL20
6293	4822 130 11596	BYW29EX-200
6312	4822 130 11397	BAS316
6312	4822 130 11528	1PS76SB10
6313	4822 130 11528	1PS76SB10
6314	4822 130 11397	BAS316
6321	4822 130 11397	BAS316
6321	4822 130 11528	1PS76SB10
6322	4822 130 11528	1PS76SB10
6324	4822 130 11397	BAS316
6325	4822 130 11416	PDZ6.8B
6333	4822 130 11397	BAS316
6333	4822 130 11528	1PS76SB10
6334	4822 130 11528	1PS76SB10
6335	4822 130 11397	BAS316
6340	4822 130 11397	BAS316
6340	4822 130 11528	1PS76SB10
6341	4822 130 11528	1PS76SB10
6342	4822 130 11397	BAS316
6344	4822 130 10838	UDZ3.3B
6347	4822 130 10654	BAT254
6348	4822 130 20297	BT169B
6362	4822 130 11397	BAS316
6364	4822 130 11397	BAS316
6365	4822 130 11397	BAS316
6375	4822 130 11397	BAS316
6376	4822 130 11397	BAS316
6378	4822 130 11528	1PS76SB10
6390	4822 130 11397	BAS316
6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6470	4822 130 11397	BAS316
6471	4822 130 11397	BAS316
6501	9336 018 60133	BZT03-C300
6502	9336 018 60133	BZT03-C300
6503	9322 128 65685	RS1G
6504	9322 128 65685	RS1G
6505	9322 161 76682	SB340L-7024
6510	9322 099 61685	BYG10J
6511	9322 099 61685	BYG10J
6512	9322 099 61685	BYG10J
6513	9322 099 61685	BYG10J

6520	4822 130 11397	BAS316
6530	4822 130 11152	UDZ18B
6531	4822 130 11152	UDZ18B
6600	9322 131 67679	GBU8JL-7000
6605	4822 130 80137	1N5406
6605	9322 161 81682	1N5406L-7024
6606	4822 130 80137	1N5406
6606	9322 161 81682	1N5406L-7024
6608	4822 130 11397	BAS316
6609	4822 130 32152	BZT03-C18
6611	3139 120 52021	BYV29X-500
6611	4822 130 83796	BYV29F-500
6640	9339 680 20115	PRLL5819
6641	4822 130 11397	BAS316
6642	9339 680 20115	PRLL5819
6643	4822 130 11152	UDZ18B
6651	9339 680 20115	PRLL5819
6652	9339 680 20115	PRLL5819
6653	4822 130 11666	BZX284-C8V2
6653	9322 129 39685	BZM55-C8V2
6654	4822 130 11397	BAS316
6660	9322 128 65685	RS1G
6661	9322 128 65685	RS1G
6663	4822 130 11397	BAS316
6665	9339 680 20115	PRLL5819
6700	4822 130 11152	UDZ18B
6703	9339 680 20115	PRLL5819
6706	4822 130 11152	UDZ18B
6709	9339 680 20115	PRLL5819

7001	9322 108 21682	MC34067P
7002▲	9322 149 04682	TCET1102
7003▲	9322 149 04682	TCET1102
7005	9322 164 01687	STU16NB50I
7005	9322 192 18687	STP15NK50ZFP
7006	9322 164 01687	STU16NB50I
7006	9322 192 18687	STP15NK50ZFP
7007	4822 130 40854	BC327
7008	4822 130 40854	BC327
7009	3198 010 42310	BC847BW
7009	9340 217 70115	BC847BW
7010	4822 209 81397	TL431CLPST
7011	4822 209 81397	TL431CLPST
7017	3198 010 42320	BC857BW
7017	5322 130 42756	BC857C
7017	9340 218 50115	BC857BW
7018	3198 010 42310	BC847BW
7018	9340 217 70115	BC847BW
7020	9335 671 30126	BC517
7021	9335 671 30126	BC517
7022	3198 010 42310	BC847BW
7022	9340 217 70115	BC847BW
7042	4822 130 41646	BF423
7050	9340 557 17118	PSMN035-150B
7052	9322 165 02668	IRFR18N15D
7058	3198 010 42310	BC847BW
7058	9340 217 70115	BC847BW
7059	4822 130 41646	BF423
7059	4822 130 41782	BF422
7090	3198 010 42320	BC857BW
7090	5322 130 42756	BC857C
7090	9340 218 50115	BC857BW
7091	3198 010 42320	BC857BW
7091	5322 130 42756	BC857C
7091	9340 218 50115	BC857BW
7092	4822 130 41246	BC327-25
7093	4822 209 80591	LM317T
7110	4822 130 41646	BF423
7111	4822 130 41646	BF423
7112	9352 673 56112	TEA1507P/N1
7117	9340 557 17118	PSMN035-150B
7120	9322 149 04682	TCET1102
7121	4822 209 81397	TL431CLPST
7130	4822 209 81397	TL431CLPST
7134	3198 010 42310	BC847BW
7134	9340 217 70115	BC847BW
7135	3198 010 42310	BC847BW
7140	9340 425 10115	BC857BS
7142	4822 130 41646	BF423
7200	4822 130 63316	BSN304
7202	5322 130 63289	BSN20
7202	9965 000 04199	BSN20
7212	9352 673 56112	TEA1507P/N1
7217	9340 557 18127	PSMN070-200P
7220	9322 149 04682	TCET1102
7227	4822 209 81397	TL431CLPST
7230	4822 209 12334	L4940V85
7260	9322 166 31682	IC L4973V3.3
7304	4822 209 81397	TL431CLPST
7308	4822 209 60177	LM339D
7326	3198 010 42310	BC847BW
7326	9340 217 70115	BC847BW
7327	3198 010 42310	BC847BW
7327	9340 217 70115	BC847BW
7330	4822 209 60177	LM339D
7341	3198 010 42320	BC857BW
7341	5322 130 42756	BC857C
7341	9340 218 50115	BC857BW
7348	3198 010 42310	BC847BW
7348	9340 217 70115	BC847BW
7351	3198 010 42310	BC847BW
7351	9340 217 70115	BC847BW
7352	3198 010 42310	BC847BW
7352	9340 217 70115	BC847BW
7362	3198 010 42310	BC847BW
7362	9340 217 70115	BC847BW
7366	4822 209 63709	LM324D
7370	5322 209 33172	PCF8574AT
7371	4822 130 40959	BC547B
7375	3198 010 42310	BC847BW
7375	9340 217 70115	BC847BW
7376	3198 010 42310	BC847BW
7376	9340 217 70115	BC847BW
7389	3198 010 42320	BC857BW
7389	5322 130 42756	BC857C
7389	9340 218 50115	BC857BW
7391	3198 010 42320	BC857BW
7391	5322 130 42756	BC857C
7391	9340 218 50115	BC857BW
7393	3198 010 42310	BC847BW
7393	9340 217 70115	BC847BW
7460	4822 130 42804	BC817-25
7460	9340 219 30115	BC817-25W
7465	3198 010 42320	BC857BW
7465	5322 130 42756	BC857C
7465	9340 218 50115	BC857BW
7470	4822 130 42804	BC817-25
7470	9340 219 30115	BC817-25W
7500	9322 037 99682	TNY256P
7501▲	9322 149 04682	TCET1102
7502	4822 209 14933	TL431IZ
7502	4822 209 81397	TL431CLPST
7530	9322 157 95668	STD16NE06L
7531	9322 157 95668	STD16NE06L
7540	4822 209 80817	L7805CV
7608	5322 130 44593	BC369
7610	9322 130 47687	STY34NB50
7640	4822 130 63316	BSN304
7641	4822 130 40981	BC337-25
7650	9322 130 69682	IC MC33368P
7654	3198 010 42320	BC857BW
7654	5322 130 42756	BC857C
7654	9340 218 50115	BC857BW
7660	5322 209 71759	MCT7815CT
7700	9322 115 29668	SI9433DY
7701	3198 010 42310	BC847BW
7701	9340 217 70115	BC847BW
7706	9322 115 29668	SI9433DY
7707	3198 010 42310	BC847BW
7707	9340 217 70115	BC847BW

Power Supply Panel FM33 AA [P]

Various

0008	4822 265 11253	Fuse holder 2p
0010	3122 421 60171	Spring
0011	3122 421 60171	Spring
0015	4822 695 00005	Insulating plate
0016	3122 121 67211	Clip max247
0017	3122 121 67201	Clip large
0020	3122 121 67191	Clip small
0021	3122 121 67191	Clip small
0022	3122 121 67191	Clip small
0023	3122 121 67191	Clip small
0024	3122 121 67191	Clip small
0025	3122 121 67191	Clip small
0206	3104 308 78231	Transistor cooling clip
0302	2422 025 10769	Connector 9P
0305	2422 025 10772	Connector 12P m
0306	2422 025 08149	Connector 6p m
0307	2422 025 17759	Connector 20P f
0308	4822 265 20723	Connector 2p m
0319	2422 025 10668	Connector 13P m
0323	2422 025 15085	Connector 10P m
0333	2422 025 12827	Connector 9P m 3.96
0342	4822 267 10618	Connector 7P
0352	4822 267 10618	Connector 7P
1082▲	2422 086 10849	Fuse F1A 250V
1083▲	2422 086 10849	Fuse F1A 250V
1084▲	2422 086 10849	Fuse F1A 250V
1110▲	4822 071 55002	Fuse T5A 250V
1200▲	9965 000 07788	Fuse T2A 250V
1260▲	2122 662 00107	Fuse RR60-075 A
1400▲	4822 253 30467	Fuse 6.3A
1401▲	9965 000 07788	Fuse T2A 250V
1402	4822 252 60151	Sparkgap dsp501
1450▲	4822 280 10382	SDT-SS-109DM
1460▲	4822 280 10382	SDT-SS-109DM

⊣⊢

2000	2020 554 90169	470pF 20% 250V
2002	3198 030 72290	22µF 20% 35V
2003	4822 124 12056	1000µF 20% 35V
2004	2020 552 96513	100pF 1% 50% 0603
2005	2020 552 96513	100pF 1% 50% 0603
2006	3198 016 31020	1nF 10% 25V 0603
2007	2238 586 59812	100nF 20-80% 50V 0603
2008	5322 126 11583	10nF 10% 50V 0603
2009	3198 030 82280	2.2µF 20% 50V
2010	5322 126 11583	10nF 10% 50V 0603
2011	2222 375 24153	15nF 5% 1kV
2012	4822 126 11254	330pF 10% 2kV
2013	4822 126 11254	330pF 10% 2kV
2014	4822 126 13862	1.5nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	3198 030 82280	2.2µF 20% 50V
2017	2222 375 24153	15nF 5% 1kV
2018	2020 552 96513	100pF 1% 50% 0603
2020	2020 024 90737	3300µF 20% 100V
2021	2020 024 90737	3300µF 20% 100V
2022	4822 124 12056	1000µF 20% 35V
2023	2238 586 59812	100nF 20-80% 50V 0603
2024	5322 126 11579	3.3nF 10% 63V
2025	2222 601 55649	100nF 10% 100V 1206
2026	4822 126 14238	2.2nF 50V 0603
2027	3198 017 31530	15nF 20% 50V 0603
2028	2238 930 11541	220pF 5% 200V
2029	4822 126 13883	220pF 5% 50V
2030	2238 586 59812	100nF 20-80% 50V 0603
2031	2222 601 55649	100nF 10% 100V 1206
2032	2238 916 15641	22nF 10% 25V 0603
2033	2238 586 59812	100nF 20-80% 50V 0603
2034	4822 126 11979	27pF 5% 2KV
2035	2238 586 15623	1nF 10% 50V 0603
2036	2238 916 15641	22nF 10% 25V 0603
2038	3198 016 31020	1nF 10% 25V 0603
2040	2238 586 59812	100nF 20-80% 50V 0603
2044	2238 930 11541	220pF 5% 200V
2045	4822 126 13883	220pF 5% 50V
2047	3198 030 72290	22µF 20% 35V
2050	2238 586 59812	100nF 20-80% 50V 0603
2054	2238 606 11536	100pF 5% 100V
2055	2238 606 11547	680pF 5% 680V
2058	4822 124 40756	1µF20% 100V
2059	2238 586 59812	100nF 20-80% 50V 0603
2061	2238 586 59812	100nF 20-80% 50V 0603
2090	2020 021 91729	4.7µF 20% 35V
2111	4822 126 13883	220pF 5% 50V
2112	3198 016 31020	1nF 10% 25V 0603
2113	4822 124 12379	220µF 25V
2114	4822 126 13473	220nF 80-20% 50V
2117	2222 780 15656	330nF 10% 16V
2118	4822 126 13449	1nF 10% 2KV
2121	2020 024 90736	2200µF 20% 100V
2122	4822 121 51319	1µF 10% 63V
2123	5322 126 11579	3.3nF 10% 63V
2126	2238 586 59812	100nF 20-80% 50V 0603
2133	3198 030 72290	22µF 20% 35V
2138	4822 126 14472	1µF 10% 10V 0805
2203	2238 586 59812	100nF 20-80% 50V 0603
2205	3198 030 82280	2.2µF 20% 50V
2210	4822 124 80151	47µF 20% 16V
2211	4822 126 13883	220pF 5% 50V
2212	4822 126 13879	220nF 20% 16V
2217	2222 780 15656	330nF 10% 16V
2218	2222 375 90141	3.3nF 1.6kV 5%
2222	2020 552 94427	100pF 5% 50v 0603
2223	2020 552 94427	100pF 5% 50v 0603
2225	2020 021 91551	2200µF 20% 25V
2226	2238 586 59812	100nF 20-80% 50V 0603
2227	2020 552 94427	100pF 5% 50v 0603
2228	2022 552 05617	10µF 5% 6.3V 1206
2229	4822 124 80151	47µF 20% 16V
2230	4822 124 80151	47µF 20% 16V
2231	4822 124 80151	47µF 20% 16V
2232	2020 552 94427	100pF 5% 50v 0603
2260	2238 586 59812	100nF 20-80% 50V 0603
2261	5322 126 11578	1nF 10% 50V 0603
2262	2238 586 59812	100nF 20-80% 50V 0603
2263	5322 126 11578	1nF 10% 50V 0603
2264	2238 586 59812	100nF 20-80% 50V 0603
2265	2022 552 05618	4.7µF 10% 10V 1206
2266	4822 126 14247	1.5nF 50V 0603
2267	4822 126 13879	220nF 20% 16V

2268	2022 552 05616	4.7μF 5% 6.3V
2269	2022 552 05616	4.7μF 5% 6.3V
2270	4822 126 13193	4.7nF 10% 63V
2271	3198 017 31530	15nF 20% 50V 0603
2272	2238 586 59812	100nF 20-80% 50V 0603
2273	2238 586 59812	100nF 20-80% 50V 0603
2290	5322 126 11583	10nF 10% 50V 0603
2291	4822 126 13883	220pF 5% 50V
2292	3198 026 51020	1000μF 50V 20%
2293	4822 126 13883	220pF 5% 50V
2294	3198 026 51020	1000μF 50V 20%
2303	2020 552 96683	220nF 10% 50V
2304	3198 016 31020	1nF 10% 25V 0603
2305	2238 586 59812	100nF 20-80% 50V 0603
2306	2238 586 59812	100nF 20-80% 50V 0603
2316	2238 586 59812	100nF 20-80% 50V 0603
2322	2238 586 59812	100nF 20-80% 50V 0603
2324	2238 586 59812	100nF 20-80% 50V 0603
2343	3198 030 82280	2.2μF 20% 50V
2350	4822 124 12095	100μF 20% 16V
2352	2238 586 59812	100nF 20-80% 50V 0603
2364	2238 586 59812	100nF 20-80% 50V 0603
2366	4822 126 14585	100nF 10% 50V
2369	4822 126 14585	100nF 10% 50V
2370	2238 586 59812	100nF 20-80% 50V 0603
2371	2238 586 59812	100nF 20-80% 50V 0603
2372	2238 586 59812	100nF 20-80% 50V 0603
2373	2238 586 59812	100nF 20-80% 50V 0603
2374	2238 586 59812	100nF 20-80% 50V 0603
2375	2238 586 59812	100nF 20-80% 50V 0603
2376	2238 586 59812	100nF 20-80% 50V 0603
2380	2238 586 59812	100nF 20-80% 50V 0603
2381	2238 586 59812	100nF 20-80% 50V 0603
2385	3198 017 41050	1μF 10V 0603
2393	2238 586 59812	100nF 20-80% 50V 0603
2396	2020 552 96683	220nF 10% 50V
2400	2222 338 22474	470nF 20% 275V
2401	2222 338 22474	470nF 20% 275V
2404	4822 126 14525	47pF 5% 1kV
2405	2020 554 90169	470pF 20% 250V
2406	4822 126 14525	47pF 5% 1kV
2407	2020 554 90169	470pF 20% 250V
2410	2222 338 22474	470nF 20% 275V
2412	2020 554 90169	470pF 20% 250V
2465	4822 124 12095	100μF 20% 16V
2503	2020 024 90708	47μF 400V 20%
2504	5322 126 11578	1nF 10% 50V 0603
2505	4822 124 12056	1000μF 20% 35V
2507	2020 552 94427	100pF 5% 50v 0603
2508	4822 124 12095	100μF 20% 16V
2509	2020 552 94427	100pF 5% 50v 0603
2510	2020 021 91506	1000μF 20% 16V
2511	2238 586 59812	100nF 20-80% 50V 0603
2512	2238 586 59812	100nF 20-80% 50V 0603
2513	2238 586 59812	100nF 20-80% 50V 0603
2530	2022 552 05636	10μF 10% 16V 1210
2532	4822 124 12095	100μF 20% 16V
2533	4822 124 12095	100μF 20% 16V
2540	4822 124 12095	100μF 20% 16V
2541	4822 124 12095	100μF 20% 16V
2600	4822 122 33799	1nF 10% 1kV
2601	4822 122 33799	1nF 10% 1kV
2605	2222 479 90086	1μF 400V 5%
2608	3198 016 31020	1nF 10% 25V 0603
2610	4822 121 70584	1,8nF 5% 2KV
2611	2222 375 90276	220pF 5% 2kV
2612	5322 126 11578	1nF 10% 50V 0603
2613	5322 126 11578	1nF 10% 50V 0603
2616	4822 124 12415	220μF 20% 400V
2617	4822 124 12415	220μF 20% 400V
2640	4822 126 13881	470pF 5% 50V
2642	3198 016 31020	1nF 10% 25V 0603
2651	5322 126 11583	10nF 10% 50V 0603
2653	4822 126 14241	330pF 50V 0603
2654	4822 124 80151	47μF 20% 16V
2655	4822 126 14472	1μF 10% 10V 0805
2656	2238 586 59812	100nF 20-80% 50V 0603
2660	4822 126 13881	470pF 5% 50V
2661	3198 016 31020	1nF 10% 25V 0603
2662	4822 124 80061	1000μF 20% 25V
2663	4822 124 40255	100μF 20% 63V
2664	4822 124 40255	100μF 20% 63V
2665	4822 126 13881	470pF 5% 50V
2666	4822 126 13193	4.7nF 10% 63V
2670	2238 586 59812	100nF 20-80% 50V 0603
2671	2238 586 59812	100nF 20-80% 50V 0603
2672	2238 586 59812	100nF 20-80% 50V 0603
2673	2022 554 04102	4.7nF 10% 500V 1210
2674	2022 554 04103	10nF 10% 500V 1210
2675	2022 554 04103	10nF 10% 500V 1210

3003	4822 117 13632	100kΩ 1% 0603 0.62W
3004	4822 051 30153	15kΩ 5% 0.062W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 30472	4.7kΩ 5% 0.062W
3008	4822 051 30102	1kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3010	4822 051 30153	15kΩ 5% 0.062W
3011	4822 051 30561	560Ω 5% 0.062W
3012	4822 051 30472	4.7kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014	4822 116 52191	33Ω 5% 0.5W
3015	4822 116 52176	10Ω 5% 0.5W
3016	4822 051 30102	1kΩ 5% 0.062W
3017	4822 116 52191	33Ω 5% 0.5W
3018	4822 116 52176	10Ω 5% 0.5W
3019	4822 051 30102	1kΩ 5% 0.062W
3020	4822 051 30563	56kΩ 5% 0.062W
3021	4822 053 11688	6.8Ω 5% 2W
3022	4822 051 30331	330Ω 5% 0.062W
3023	4822 117 12925	47kΩ 1% 0.063W 0603
3024	2322 734 67503	75kΩ 1% 0.062W 0805
3025	5322 117 13046	1.8kΩ 1% 0.063W 0603
3027	4822 117 12925	47kΩ 1% 0.063W 0603
3028	4822 117 10362	7.5kΩ 1% 0,1W
3029	4822 051 30102	1kΩ 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	2322 704 61103	11kΩ 1% 0603
3032	2322 704 61103	11kΩ 1% 0603
3033	4822 051 30222	2.2kΩ 5% 0.062W
3034	4822 051 30221	220Ω 5% 0.062W
3037	4822 051 30103	10kΩ 5% 0.062W
3038	4822 117 13632	100kΩ 1% 0603 0.62W
3039	4822 051 30105	1MΩ 5% 0.062W
3040	4822 117 10837	100kΩ 1% 0.1W
3041	4822 051 30333	33kΩ 5% 0.062W
3042	4822 051 30471	470Ω 5% 0.062W
3043	4822 051 30472	4.7kΩ 5% 0.062W
3044	4822 051 30102	1kΩ 5% 0.062W
3045	4822 051 30102	1kΩ 5% 0.062W
3046	4822 053 20565	5.6MΩ 5% 0.25W
3047	4822 051 30154	150kΩ 5% 0.062W
3048	4822 051 30472	4.7kΩ 5% 0.062W
3049	4822 051 30123	12kΩ 5% 0.062W
3050	4822 052 10398	3.9Ω 5% 0,33W
3051	4822 051 20399	39Ω 5% 0.1W
3053	2322 662 93131	10Ω PTC
3054	4822 117 10833	10kΩ 1% 0.1W
3056	4822 051 30331	330Ω 5% 0.062W
3057	4822 051 30101	100Ω 5% 0.062W
3058	4822 051 20105	1MΩ 5% 0.1W
3062	4822 051 30102	1kΩ 5% 0.062W
3064	4822 051 30103	10kΩ 5% 0.062W
3065	4822 051 30102	1kΩ 5% 0.062W
3066	4822 051 30103	10kΩ 5% 0.062W
3067	4822 051 30153	15kΩ 5% 0.062W
3070	4822 051 30103	10kΩ 5% 0.062W
3071	4822 117 12925	47kΩ 1% 0.063W 0603
3075	4822 051 20105	1MΩ 5% 0.1W
3076	4822 117 13632	100kΩ 1% 0603 0.62W
3077	4822 051 20105	1MΩ 5% 0.1W
3078	4822 117 13632	100kΩ 1% 0603 0.62W
3080	4822 051 30101	100Ω 5% 0.062W
3081	4822 051 30222	2.2kΩ 5% 0.062W
3083	4822 051 10102	1kΩ 2% 0.25W
3084	4822 051 30103	10kΩ 5% 0.062W
3085	4822 117 12925	47kΩ 1% 0.063W 0603
3086	4822 117 12925	47kΩ 1% 0.063W 0603
3087	4822 117 12925	47kΩ 1% 0.063W 0603
3088	4822 117 12925	47kΩ 1% 0.063W 0603
3090	4822 051 30101	100Ω 5% 0.062W
3091	4822 051 30102	1kΩ 5% 0.062W
3092	4822 051 30471	470Ω 5% 0.062W
3093	4822 051 30102	1kΩ 5% 0.062W
3095	4822 051 30471	470Ω 5% 0.062W
3096	4822 051 30562	5.6kΩ 5% 0.063W 0603
3097	4822 117 12968	820Ω 5% 0.62W
3106	4822 117 12955	2.7kΩ 1% 0.1W 0805
3107	4822 117 12955	2.7kΩ 1% 0.1W 0805
3108	4822 117 12955	2.7kΩ 1% 0.1W 0805
3109	4822 117 12955	2.7kΩ 1% 0.1W 0805
3110	4822 051 30102	1kΩ 5% 0.062W
3112	4822 051 30102	1kΩ 5% 0.062W
3113	4822 051 30474	470kΩ 5% 0.062W
3114	4822 051 20564	560kΩ 5% 0.1W
3115	4822 117 12891	220kΩ 1% 0.063W 0603
3116	4822 051 30102	1kΩ 5% 0.062W
3117	4822 051 30103	10kΩ 5% 0.062W
3118	2122 118 06084	0.051Ω 5% 1W 2512
3120	4822 117 12903	1.8kΩ 1% 0.063W 0603
3121	4822 117 12925	47kΩ 1% 0.063W 0603
3122	2322 734 67503	75kΩ 1% 0.062W 0805
3123	4822 117 10965	18kΩ 1% 0.1W
3124	2322 704 67502	7.5K 1% 0,5W
3125	2322 704 67502	7.5K 1% 0,5W
3126	5322 117 13037	2.2kΩ 0.063W 0603
3128	4822 051 30333	33kΩ 5% 0.062W
3130	4822 051 30102	1kΩ 5% 0.062W
3131	2322 704 61103	11kΩ 1% 0603
3132	4822 051 30221	220Ω 5% 0.062W
3133	4822 051 30101	100Ω 5% 0.062W
3134	4822 051 30331	330Ω 5% 0.062W
3135	4822 117 12925	47kΩ 1% 0.063W 0603
3136	4822 117 12925	47kΩ 1% 0.063W 0603
3138	4822 117 11503	220Ω 1% 0.1W
3139	4822 117 11503	220Ω 1% 0.1W
3140	2322 734 67503	75kΩ 1% 0.062W 0805
3141	2322 734 67503	75kΩ 1% 0.062W 0805
3142	5322 117 12487	1kΩ 1% 0.125W
3143	4822 053 11472	4kΩ 5% 2W
3145	2322 763 65107	0.51Ω 1% 1W 2512
3146	2322 763 65107	0.51Ω 1% 1W 2512
3147	2322 704 61103	11kΩ 1% 0603
3200	2322 730 61224	220kΩ 5% 0.062W 0805
3202	4822 051 30479	47Ω 5% 0.062W
3203	4822 051 30101	100Ω 5% 0.062W
3204	4822 117 13632	100kΩ 1% 0603 0.62W
3205	4822 117 13632	100kΩ 1% 0603 0.62W
3206	4822 117 12955	2.7kΩ 1% 0.1W 0805
3207	4822 117 12955	2.7kΩ 1% 0.1W 0805
3208	4822 117 12955	2.7kΩ 1% 0.1W 0805
3209	4822 117 12955	2.7kΩ 1% 0.1W 0805
3212	4822 051 30102	1kΩ 5% 0.062W
3213	4822 051 20394	390kΩ 5% 0.1W
3214	4822 117 13632	100kΩ 1% 0603 0.62W
3216	4822 051 30102	1kΩ 5% 0.062W
3217	4822 051 30103	10kΩ 5% 0.062W
3218	2122 118 06084	0.051Ω 5% 1W 2512
3224	5322 117 13028	12kΩ 1% 0.063W 0603
3225	2322 704 61103	11kΩ 1% 0603
3226	4822 051 30103	10kΩ 5% 0.062W
3228	4822 051 30151	150Ω 5% 0.062W
3260	4822 051 30109	10Ω 5% 0.062W
3261	4822 051 30681	680Ω 5% 0.062W
3263	4822 117 12925	47kΩ 1% 0.063W 0603
3264	4822 117 12925	47kΩ 1% 0.063W 0603
3266	4822 051 30272	2.7kΩ 5% 0.062W
3267	5322 117 13062	390Ω 1% 0.063W 0603
3268	4822 051 30103	10kΩ 5% 0.062W
3270	4822 051 30681	680Ω 5% 0.062W
3271	4822 051 30102	1kΩ 5% 0.062W
3272	5322 117 13018	1kΩ 1% 0.063W 0603
3292	4822 051 30561	560Ω 5% 0.062W
3300	4822 117 13579	220kΩ 1% 0.1W 0805
3301	4822 117 13579	220kΩ 1% 0.1W 0805
3302	2312 916 71004	100kΩ 1%
3303	2312 916 71004	100kΩ 1%
3304	4822 051 30102	1kΩ 5% 0.062W
3305	2312 916 76202	6.2kΩ 1%
3306	2322 704 61103	11kΩ 1% 0603
3307	5322 117 13028	12kΩ 1% 0.063W 0603
3308	4822 051 30102	1kΩ 5% 0.062W
3310	4822 051 30472	4.7kΩ 5% 0.062W
3311	4822 117 13579	220kΩ 1% 0.1W 0805
3312	4822 051 30102	1kΩ 5% 0.062W
3313	2322 704 67502	7.5K 1% 0,5W
3316	2312 916 77502	7.5kΩ 1%
3317	2322 704 67502	7.5K 1% 0,5W
3319	4822 051 30472	4.7kΩ 5% 0.062W
3320	2322 704 61103	11kΩ 1% 0603
3321	4822 051 30102	1kΩ 5% 0.062W
3322	5322 117 13042	3.9kΩ 1% 0.063W 0603
3323	4822 117 10833	10kΩ 1% 0.1W
3324	4822 051 30102	1kΩ 5% 0.062W
3325	4822 051 30471	470Ω 5% 0.062W
3326	4822 051 30472	4.7kΩ 5% 0.062W
3327	4822 051 30103	10kΩ 5% 0.062W
3328	4822 051 30103	10kΩ 5% 0.062W
3331	4822 051 30472	4.7kΩ 5% 0.062W
3332	4822 117 11144	3.9kΩ 1% 0.1W
3333	4822 051 30102	1kΩ 5% 0.062W
3334	4822 117 12955	2.7kΩ 1% 0.1W 0805
3335	4822 116 83933	15kΩ 1% 0.1W
3339	4822 051 30472	4.7kΩ 5% 0.062W
3340	4822 051 30102	1kΩ 5% 0.062W
3341	4822 051 30103	10kΩ 5% 0.062W
3342	4822 051 30103	10kΩ 5% 0.062W
3343	4822 051 30102	1kΩ 5% 0.062W
3344	4822 051 30102	1kΩ 5% 0.062W
3345	4822 051 30472	4.7kΩ 5% 0.062W
3347	4822 051 30331	330Ω 5% 0.062W
3348	4822 051 30331	330Ω 5% 0.062W
3349	4822 051 30102	1kΩ 5% 0.062W
3350	4822 051 30472	4.7kΩ 5% 0.062W

3351	4822 051 30103	10kΩ 5% 0.062W
3352	4822 051 30103	10kΩ 5% 0.062W
3353	4822 051 30103	10kΩ 5% 0.062W
3354	4822 051 30472	4.7kΩ 5% 0.062W
3358	4822 051 30222	2.2kΩ 5% 0.062W
3359	4822 051 30472	4.7kΩ 5% 0.062W
3360	4822 117 11817	1.2kΩ 1% 1/16W
3361	4822 051 30472	4.7kΩ 5% 0.062W
3363	4822 051 30102	1kΩ 5% 0.062W
3364	4822 051 30102	1kΩ 5% 0.062W
3368	4822 051 30101	100Ω 5% 0.062W
3369	4822 051 30101	100Ω 5% 0.062W
3370	4822 051 30101	100Ω 5% 0.062W
3371	4822 051 30101	100Ω 5% 0.062W
3372	9337 224 50116	Temp sens. KTY81-210
3373	4822 051 30472	4.7kΩ 5% 0.062W
3374	4822 117 12925	47kΩ 1% 0.063W 0603
3376	4822 117 12925	47kΩ 1% 0.063W 0603
3377	4822 051 30472	4.7kΩ 5% 0.062W
3378	4822 051 30103	10kΩ 5% 0.062W
3380	4822 117 12925	47kΩ 1% 0.063W 0603
3381	4822 117 12925	47kΩ 1% 0.063W 0603
3382	5322 117 13039	222kΩ 1% 0.063W 0603
3385	4822 117 13632	100kΩ 1% 0603 0.62W
3386	4822 117 13632	100kΩ 1% 0603 0.62W
3387	4822 051 30471	470Ω 5% 0.062W
3388	4822 051 30102	1kΩ 5% 0.062W
3389	4822 051 30102	1kΩ 5% 0.062W
3390	4822 051 30103	10kΩ 5% 0.062W
3391	4822 051 30103	10kΩ 5% 0.062W
3392	4822 051 30102	1kΩ 5% 0.062W
3393	4822 051 30103	10kΩ 5% 0.062W
3394	4822 051 30102	1kΩ 5% 0.062W
3395	4822 051 30103	10kΩ 5% 0.062W
3396	2312 916 71004	100kΩ 1%
3397	2312 916 71004	100kΩ 1%
3400⚠	2322 595 90021	VDR 1mA/495V 850V
3401	4822 117 10118	1MΩ 5% 0,5W
3404	4822 116 83872	220Ω 5% 0.5W
3450	2322 662 93131	10Ω PTC
3451	2322 662 93131	10Ω PTC
3452	2122 612 00051	NTC 1Ω 20%
3453	2122 612 00051	NTC 1Ω 20%
3460	4822 051 30472	4.7kΩ 5% 0.062W
3461	4822 051 30103	10kΩ 5% 0.062W
3463	4822 051 30103	10kΩ 5% 0.062W
3465	4822 051 30103	10kΩ 5% 0.062W
3467	4822 051 30103	10kΩ 5% 0.062W
3469	4822 051 30472	4.7kΩ 5% 0.062W
3470	4822 051 30103	10kΩ 5% 0.062W
3501	4822 051 30101	100Ω 5% 0.062W
3502	4822 051 30471	470Ω 5% 0.062W
3503	5322 117 13026	4.7kΩ 1% 0.063W 0603
3504	5322 117 13024	33kΩ 1% 0.063W 0603
3505	4822 117 11139	1.5kΩ 1% 0.1W
3506	2322 662 93131	10Ω PTC
3508	2322 194 63109	10Ω 5% 2W
3510	4822 051 20684	680kΩ 5% 0.1W
3511	4822 051 20684	680kΩ 5% 0.1W
3512	4822 051 20684	680kΩ 5% 0.1W
3520	4822 051 30109	10Ω 5% 0.062W
3530	4822 117 13632	100kΩ 1% 0603 0.62W
3603	4822 051 20474	470kΩ 5% 0.1W
3604	4822 051 20474	470kΩ 5% 0.1W
3605	4822 051 20474	470kΩ 5% 0.1W
3608	4822 116 52179	12Ω 5% 0,5W
3610	5322 116 53564	3.3Ω 5% 0.5W
3611	4822 050 11002	1kΩ 1% 0.4W
3614	2120 106 90565	0.1Ω 5% 1W
3615	2120 106 90565	0.1Ω 5% 1W
3639	4822 051 30102	1kΩ 5% 0.062W
3640	4822 051 30331	330Ω 5% 0.062W
3641	4822 051 30471	470Ω 5% 0.062W
3642	4822 051 30101	100Ω 5% 0.062W
3651	4822 051 30103	10kΩ 5% 0.062W
3652	4822 051 30105	1MΩ 5% 0.062W
3654	4822 051 30103	10kΩ 5% 0.062W
3655	4822 051 30102	1kΩ 5% 0.062W
3660	4822 051 20391	390Ω 5% 0.1W
3661	4822 051 20391	390Ω 5% 0.1W
3663	4822 052 10108	1Ω 5% 0.33W
3664	2322 704 62404	240kΩ 1% 0603
3665	4822 051 30103	10kΩ 5% 0.062W
3666	4822 051 30101	100Ω 5% 0.062W
3667	4822 051 30103	10kΩ 5% 0.062W
3668	4822 052 11102	1kΩ 5% 0,5W
3671	2322 704 61103	11kΩ 1% 0603
3673	4822 052 11102	1kΩ 5% 0,5W
3675	4822 117 12917	1Ω 5% 0.062W 0603
3676	5322 117 13026	4.7kΩ 1% 0.063W 0603
3677	5322 117 13029	47kΩ 1% 0.063W 0603
3678	4822 117 12925	47kΩ 1% 0.063W 0603
3680	2322 734 62704	270kΩ 1% 0.1W 0805
3681	2322 734 62704	270kΩ 1% 0.1W 0805
3682	2322 734 62704	270kΩ 1% 0.1W 0805
3683	4822 051 20334	330kΩ 5% 0,1W
3684	4822 051 20334	330kΩ 5% 0,1W
3685	4822 051 20334	330kΩ 5% 0,1W
3999	4822 051 30102	1kΩ 5% 0.062W
4300	4822 051 30008	Jumper 0603

5001	2422 531 02444	Transformer S13932-04Y
5002⚠	3104 308 20811	Trans. BS42236-00B
5004⚠	3104 308 20811	Trans. BS42236-00B
5121	3104 308 20771	BD21232-00
5220⚠	3104 308 20911	Trans. BS29238-00
5225	2422 535 95273	6.8μH 20%
5229	4822 157 71461	22μH 10%
5267⚠	2422 535 94603	22μH 10%
5290⚠	3104 308 20761	Trans. BD 15230-00B
5291	4822 157 11737	22μH 10%
5292	4822 157 11737	22μH 10%
5293	4822 157 11737	22μH 10%
5294	4822 157 11499	BLM11P600SPT
5401⚠	3104 308 20921	Filter DMF2807 B
5402⚠	3104 308 20921	Filter DMF2807 B
5404⚠	3104 308 20921	Filter DMF2807 B
5500⚠	3104 308 20781	Transformer CE165T
5505	4822 157 11737	22μH 10%
5600⚠	3104 308 20821	Coil BS42228-00 B
5612	4822 157 11411	Bead 83Ω at 100MHz
5660	4822 157 51192	220MH

6004	4822 130 11397	BAS316
6005	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6009	4822 130 11397	BAS316
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6018	4822 130 11397	BAS316
6019	4822 130 11397	BAS316
6021	9322 128 70685	SMSS14
6022	4822 130 11397	BAS316
6023	4822 130 11397	BAS316
6027	4822 130 11397	BAS316
6028	4822 130 11397	BAS316
6031	3198 020 55680	BZX384-C5V6
6032	3198 020 55680	BZX384-C5V6
6033	9322 150 18685	BZX384-C47
6034	4822 130 11397	BAS316
6035	4822 130 11397	BAS316
6042	9322 150 18685	BZX384-C47
6044	9322 167 08687	STTH2003CF
6045	9322 128 70685	SMSS14
6047	9322 128 65685	RS1G
6050	4822 130 11152	UDZ18B
6054	9340 553 52115	BAS321
6055	9340 553 52115	BAS321
6061	4822 130 11152	UDZ18B
6075⚠	9340 292 80135	BZG03-C270
6077⚠	9340 292 80135	BZG03-C270
6086	4822 130 11397	BAS316
6095	4822 130 11397	BAS316
6111	4822 130 11397	BAS316
6112	4822 130 11397	BAS316
6113	4822 130 11397	BAS316
6117	4822 130 11152	UDZ18B
6120	4822 130 11596	BYW29EX-200
6123	4822 130 11397	BAS316
6133	4822 130 11397	BAS316
6202	4822 130 11397	BAS316
6204	3198 020 55680	BZX384-C5V6
6205	4822 130 11152	UDZ18B
6206	4822 130 11397	BAS316
6211	9322 128 65685	RS1G
6213	4822 130 11397	BAS316
6216	4822 130 11152	UDZ18B
6225	9322 173 47687	STPS20L40CFP
6230	9322 128 70685	SMSS14
6261	4822 130 11397	BAS316
6269	9339 680 20115	PRLL5819
6291	4822 130 81274	MBR745
6292	4822 130 81274	MBR745
6312	4822 130 11528	1PS76SB10
6313	4822 130 11528	1PS76SB10
6321	4822 130 11528	1PS76SB10
6322	4822 130 11528	1PS76SB10
6325	4822 130 11416	PDZ6.8B
6333	4822 130 11528	1PS76SB10
6334	4822 130 11528	1PS76SB10
6340	4822 130 11528	1PS76SB10
6341	4822 130 11528	1PS76SB10
6344	4822 130 10838	UDZ3.3B
6347	4822 130 10654	BAT254
6348⚠	9322 192 17685	P0102BL
6362	4822 130 11397	BAS316
6364	4822 130 11397	BAS316
6365	4822 130 11397	BAS316
6375	4822 130 11397	BAS316
6376	4822 130 11397	BAS316
6378	4822 130 11528	1PS76SB10
6390	4822 130 11397	BAS316
6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6470	4822 130 11397	BAS316
6471	4822 130 11397	BAS316
6501⚠	9340 292 80135	BZG03-C270
6502⚠	9340 292 80135	BZG03-C270
6503	9322 128 65685	RS1G
6504	9322 128 65685	RS1G
6505	9322 180 55668	MBRS340
6510	9322 099 61685	BYG10J
6511	9322 099 61685	BYG10J
6512	9322 099 61685	BYG10J
6513	9322 099 61685	BYG10J
6520	4822 130 11397	BAS316
6530	4822 130 11152	UDZ18B
6531	4822 130 11152	UDZ18B
6600	9322 131 67679	GBU8JL-7000
6605	9322 192 15668	SM S3J
6606	9322 192 15668	SM S3J
6608	4822 130 11397	BAS316
6609⚠	9340 289 90135	BZG03-C18
6611	3139 120 52021	BYV29X-500
6640	9339 680 20115	PRLL5819
6641	4822 130 11397	BAS316
6642	9339 680 20115	PRLL5819
6643	4822 130 11152	UDZ18B
6652	9339 680 20115	PRLL5819
6653	4822 130 10837	UDZS8.2B
6654	4822 130 11397	BAS316
6660	9322 128 65685	RS1G
6661	9322 128 65685	RS1G
6663	9339 680 20115	PRLL5819
6665	9339 680 20115	PRLL5819

7001	9322 108 21682	MC34067P
7002⚠	9322 192 38668	TCLT1002
7003⚠	9322 192 38668	TCLT1002
7005	9322 192 18687	STP15NK50ZFP
7006	9322 192 18687	STP15NK50ZFP
7007	4822 130 40854	BC327
7008	4822 130 40854	BC327
7009	3198 010 42310	BC847BW
7010⚠	9322 192 16685	TS2431AI
7011⚠	9322 192 16685	TS2431AI
7017	3198 010 42320	BC857BW
7018	3198 010 42310	BC847BW
7020	9335 671 30126	BC517
7021	9335 671 30126	BC517
7022	3198 010 42310	BC847BW
7042⚠	9340 308 50135	PMST5401
7050	9340 557 17118	PSMN035-150B
7052	9322 165 02668	IRFR18N15D
7058	3198 010 42310	BC847BW
7059⚠	9340 308 60135	PMST5550
7090	3198 010 42320	BC857BW
7091	3198 010 42320	BC857BW
7092	3198 010 44350	BC807-25W
7093	4822 209 80591	LM317T
7110⚠	9340 308 50135	PMST5401
7112	9352 673 56112	TEA1507P/N1
7117	9340 557 17118	PSMN035-150B
7120⚠	9322 192 38668	TCLT1002
7121⚠	9322 192 16685	TS2431AI
7130⚠	9322 192 16685	TS2431AI
7134	3198 010 42310	BC847BW
7140	9340 425 10115	BC857BS
7142⚠	9340 308 50135	PMST5401
7200	9340 565 06215	BSH114
7202	9965 000 04199	BSN20
7212	9352 673 56112	TEA1507P/N1
7217	9340 557 18127	PSMN070-200P
7220⚠	9322 192 38668	TCLT1002
7227⚠	9322 192 16685	TS2431AI
7230⚠	9322 193 05668	L4940D2T85
7260⚠	9322 182 77668	L6910
7262	9322 160 70668	SI4936ADY
7263	3198 010 42310	BC847BW
7304⚠	9322 192 16685	TS2431AI
7308	4822 209 60177	LM339D
7326	3198 010 42310	BC847BW

7327	3198 010 42310	BC847BW
7330	4822 209 60177	LM339D
7341	3198 010 42320	BC857BW
7348	3198 010 42310	BC847BW
7351	3198 010 42310	BC847BW
7352	3198 010 42310	BC847BW
7362	3198 010 42310	BC847BW
7366	5322 209 82941	LM358D
7370	5322 209 33172	PCF8574AT
7372⚠	9352 697 76118	LM75ADP
7375	3198 010 42310	BC847BW
7376	3198 010 42310	BC847BW
7389	3198 010 42320	BC857BW
7391	3198 010 42320	BC857BW
7393	3198 010 42310	BC847BW
7460	9340 219 30115	BC817-25W
7465	3198 010 42320	BC857BW
7470	9340 219 30115	BC817-25W
7500	9322 037 99682	TNY256P
7501⚠	9322 192 38668	TCLT1002
7502⚠	9322 192 16685	TS2431AI
7530	9322 160 70668	SI4936ADY
7540	9322 156 14668	LD1117D50
7608	5322 130 44593	BC369
7610	9322 130 47687	STY34NB50
7640	9965 000 04199	BSN20
7641	9340 219 30115	BC817-25W
7650	9322 130 69682	IC MC33368P
7654	3198 010 42320	BC857BW
7661	5322 209 90529	MC34063AD

Power Supply Panel FM24 AB [P]

Various

0006	4822 265 11253	Fuse holder 2p
0008	4822 265 11253	Fuse holder 2p
0010	3122 421 60171	Spring
0011	3122 421 60171	Spring
0015	4822 695 00005	Insulating plate
0016	3122 121 67211	Clip max247
0017	3122 121 67201	Clip large
0018	3122 121 67201	Clip large
0020	3122 121 67191	Clip small
0021	3122 121 67191	Clip small
0022	3122 121 67191	Clip small
0023	3122 121 67191	Clip small
0024	3122 121 67191	Clip small
0025	3122 121 67191	Clip small
0027	3122 121 67191	Clip small
0028	4822 701 13088	Transistor clamp
0029	4822 701 13088	Transistor clamp
0040	2413 015 00065	Cable tie BT18R/4B
0041	3122 124 36011	Thermo foam
0205	3104 308 78231	Transistor cooling clip
0206	3104 308 78231	Transistor cooling clip
0302	2422 025 10769	Connector 9P
0305	2422 025 10772	Connector 12P m
0306	2422 025 08149	Connector 6p m
0307	2422 025 17154	Connector 20P f
0307	2422 025 17759	Connector 20P f
0308	4822 265 20723	Connector 2p m
0319	2422 025 10668	Connector 13P m
0323	2422 025 15085	Connector 10P m
0333	2422 025 12827	Connector 9P m 3.96
0342	4822 267 10618	Connector 7P
0352	4822 267 10618	Connector 7P
0389	4822 267 10735	Connector 3p m
0390	4822 267 10735	Connector 3p m
0392	2422 025 09406	Connector 4p
1004⚠	4822 070 33152	Fuse 3.15A
1005⚠	4822 071 55002	Fuse T5A 250V
1041⚠	4822 071 55002	Fuse T5A 250V
1042⚠	4822 071 55002	Fuse T5A 250V
1043⚠	4822 071 55002	Fuse T5A 250V
1044⚠	4822 071 55002	Fuse T5A 250V
1045⚠	4822 071 55002	Fuse T5A 250V
1084⚠	2422 086 10849	Fuse F1A 250V
1110⚠	4822 071 55002	Fuse T5A 250V
1200⚠	9965 000 07788	Fuse T2A 250V
1260⚠	2122 662 00107	Fuse RR60-075 A
1400⚠	4822 253 30467	Fuse 6.3A
1401⚠	9965 000 07788	Fuse T2A 250V
1402⚠	4822 252 60151	Sparkgap dsp501
1450⚠	4822 280 10382	SDT-SS-109DM
1460⚠	4822 280 10382	SDT-SS-109DM

⊣⊢

2000	2020 554 90148	470pF 20% 250V
2001	2222 151 90062	47µF 20% 450V
2002	4822 124 40207	100µF 20% 25V
2003	4822 124 12056	1000µF 20% 35V
2004	2222 464 90017	200pF 2% 630V
2005	4822 121 51288	100pF 630V
2006	3198 016 31020	1nF 10% 25V 0603
2007	2238 586 59812	100nF 20-80% 50V 0603
2008	5322 126 11583	10nF 10% 50V 0603
2009	4822 124 22652	2.2µF 20% 50V
2010	5322 126 11583	10nF 10% 50V 0603
2011	2222 375 24153	15nF 5% 1kV
2012	4822 126 11254	330pF 10% 2kV
2013	4822 126 11254	330pF 10% 2kV
2014	4822 126 13862	1.5nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	3198 032 64090	2.2µF 20% 25V
2016	4822 124 22652	2.2µF 20% 50V
2017	2222 375 24153	15nF 5% 1kV
2020	2222 156 29332	3300µF 20% 100V 156
2021	2222 156 19332	3300µF20% 100V 156
2022	4822 124 12056	1000µF 20% 35V
2023	2238 586 59812	100nF 20-80% 50V 0603
2024	5322 126 11579	3.3nF 10% 63V
2025	2020 321 90041	180nF 250V 5%
2026	4822 126 14238	2.2nF 50V 0603
2027	3198 017 31530	15nF 20% 50V 0603
2028	2238 930 11541	220pF 5% 200V
2029	4822 126 13883	220pF 5% 50V
2030	2238 586 59812	100nF 20-80% 50V 0603
2032	2238 916 15641	22nF 10% 25V 0603
2032	4822 126 14494	22nF 10% 25V 0603
2033	2238 586 59812	100nF 20-80% 50V 0603
2034	4822 126 11979	27pF 5% 2KV
2035	2238 586 15623	1nF 10% 50V 0603
2036	2238 916 15641	22nF 10% 25V 0603
2036	4822 126 14494	22nF 10% 25V 0603
2038	3198 016 31020	1nF 10% 25V 0603
2040	2238 586 59812	100nF 20-80% 50V 0603
2041	2238 930 11541	220pF 5% 200V
2042	2238 930 11541	220pF 5% 200V
2043	2222 056 59222	2200µF 100V 20%
2044	2238 930 11541	220pF 5% 200V
2045	4822 126 13883	220pF 5% 50V
2046	2238 930 11541	220pF 5% 200V
2047	2238 930 11541	220pF 5% 200V
2048	2238 930 11541	220pF 5% 200V
2049	2238 930 11541	220pF 5% 200V
2050	2238 586 59812	100nF 20-80% 50V 0603
2054	2238 606 11536	100pF 5% 100V
2054	2238 930 11541	220pF 5% 200V
2055	2020 557 90731	1nF 10% 250V 0805
2055	2238 606 11547	680pF 5% 680V
2058	4822 124 40756	1µF20% 100V
2059	2238 586 59812	100nF 20-80% 50V 0603
2061	2238 586 59812	100nF 20-80% 50V 0603
2090	4822 124 40769	4.7µF 20% 100V
2110	5322 126 11583	10nF 10% 50V 0603
2111	4822 126 13883	220pF 5% 50V
2112	3198 016 31020	1nF 10% 25V 0603
2113	4822 124 12379	220µF 25V
2113	4822 124 80875	220µF 20% 25V
2114	4822 126 13473	220nF 80-20% 50V
2117	2222 780 15656	330nF 10% 16V
2118	4822 126 13449	1nF 10% 2KV
2121	2222 056 59222	2200µF 100V 20%
2122	4822 121 51319	1µF 10% 63V
2122	4822 124 40756	1µF20% 100V
2123	5322 126 11579	3.3nF 10% 63V
2126	2238 586 59812	100nF 20-80% 50V 0603
2133	3198 029 32290	22µF 20% 25V
2138	4822 124 12084	1µF 20% 50V
2138	4822 124 21913	1µF 20% 63V
2203	2238 586 59812	100nF 20-80% 50V 0603
2205	3198 032 64090	2.2µF 20% 25V
2210	4822 124 40433	47µF 20% 25V
2211	4822 126 13883	220pF 5% 50V
2212	2238 586 59812	100nF 20-80% 50V 0603
2212	4822 126 13879	220nF 20% 16V
2217	2222 780 15656	330nF 10% 16V
2218	2222 375 90141	3.3nF 1.6kV 5%
2219	2020 021 91543	47µF 20% 160V
2222	2020 552 94427	100pF 5% 50v 0603
2223	2020 552 94427	100pF 5% 50v 0603
2224	2020 021 91551	2200µF 20% 25V
2225	2020 021 91551	2200µF 20% 25V
2226	2238 586 59812	100nF 20-80% 50V 0603
2227	2020 552 94427	100pF 5% 50v 0603
2228	2020 021 91411	1000µF 20% 35V
2229	5322 126 11578	1nF 10% 50V 0603
2230	5322 121 10472	47µF
2231	5322 121 10472	47µF
2232	2020 552 94427	100pF 5% 50v 0603
2260	4822 126 14043	1µF 20% 16V
2261	2020 021 91411	1000µF 20% 35V
2262	4822 126 13473	220nF 80-20% 50V
2263	2222 861 15272	2.7nF 5% 50V 0805
2264	4822 126 13482	470nF 80-20% 16V
2265	4822 126 14241	330pF 50V 0603
2266	2238 916 15641	22nF 10% 25V 0603
2266	4822 126 14494	22nF 10% 25V 0603
2267	5322 126 10223	4.7nF 10% 63V
2268	4822 126 13473	220nF 80-20% 50V
2269	2020 021 91524	220µF 20% 25V
2270	4822 124 40433	47µF 20% 25V
2290	5322 126 11583	10nF 10% 50V 0603
2291	4822 126 13883	220pF 5% 50V
2292	2020 021 91354	1000µF 20% 50V
2293	4822 126 13883	220pF 5% 50V
2294	2020 021 91354	1000µF 20% 50V
2303	4822 121 42408	220nF 10% 50V
2304	3198 016 31020	1nF 10% 25V 0603
2305	2238 586 59812	100nF 20-80% 50V 0603
2306	2238 586 59812	100nF 20-80% 50V 0603
2316	2238 586 59812	100nF 20-80% 50V 0603
2322	2238 586 59812	100nF 20-80% 50V 0603
2324	2238 586 59812	100nF 20-80% 50V 0603
2343	4822 124 22652	2.2µF 20% 50V
2350	4822 124 40207	100µF 20% 25V
2352	2238 586 59812	100nF 20-80% 50V 0603
2364	2238 586 59812	100nF 20-80% 50V 0603
2366	2238 586 59812	100nF 20-80% 50V 0603
2370	2238 586 59812	100nF 20-80% 50V 0603
2376	2238 586 59812	100nF 20-80% 50V 0603
2380	2238 586 59812	100nF 20-80% 50V 0603
2381	2238 586 59812	100nF 20-80% 50V 0603
2385	3198 017 41050	1µF 10V 0603
2393	2238 586 59812	100nF 20-80% 50V 0603
2396	4822 121 42408	220nF 10% 50V
2400	4822 126 13589	470nF 275V
2401	4822 126 13589	470nF 275V
2404	4822 126 14525	47pF 5% 1kV
2405	2020 554 90148	470pF 20% 250V
2406	4822 126 14525	47pF 5% 1kV
2407	2020 554 90148	470pF 20% 250V
2408	2020 554 90148	470pF 20% 250V
2409	2020 554 90148	470pF 20% 250V
2410	4822 126 13589	470nF 275V
2411	2020 554 90148	470pF 20% 250V
2412	2020 554 90148	470pF 20% 250V
2465	4822 124 40207	100µF 20% 25V
2503	2222 151 90062	47µF 20% 450V
2504	5322 126 11578	1nF 10% 50V 0603
2505	2020 021 91354	1000µF 20% 50V
2507	2020 552 94427	100pF 5% 50v 0603
2508	4822 124 12032	4.7µF 20% 50V
2509	2020 552 94427	100pF 5% 50v 0603
2510	4822 124 81145	1000µF 16V 20%
2511	2238 586 59812	100nF 20-80% 50V 0603
2512	2238 586 59812	100nF 20-80% 50V 0603
2513	2238 586 59812	100nF 20-80% 50V 0603
2530	5322 124 40641	10µF 20% 100V
2532	4822 124 40207	100µF 20% 25V
2533	4822 124 40207	100µF 20% 25V
2540	4822 124 40207	100µF 20% 25V
2541	4822 124 40207	100µF 20% 25V
2600	4822 122 33799	1nF 10% 1kV
2601	4822 122 33799	1nF 10% 1kV
2605	2222 479 90086	1µF 400V 5%
2608	3198 016 31020	1nF 10% 25V 0603
2610	4822 121 70584	1,8nF 5% 2KV
2611	2222 375 90276	220pF 5% 2kV
2612	5322 126 11578	1nF 10% 50V 0603
2613	5322 126 11578	1nF 10% 50V 0603
2616	2222 057 36221	220µF 20% 400V 057
2617	2222 057 36221	220µF 20% 400V 057
2640	4822 126 13881	470pF 5% 50V
2642	3198 016 31020	1nF 10% 25V 0603
2651	5322 126 11583	10nF 10% 50V 0603
2653	4822 126 14241	330pF 50V 0603
2654	4822 124 40433	47µF 20% 25V
2655	4822 121 51319	1µF 10% 63V
2656	2238 586 59812	100nF 20-80% 50V 0603
2662	4822 124 80061	1000µF 20% 25V
2663	4822 124 40255	100µF 20% 63V
2664	4822 124 40255	100µF 20% 63V
2665	4822 126 13881	470pF 5% 50V
2666	4822 126 13193	4.7nF 10% 63V
2670	2238 586 59812	100nF 20-80% 50V 0603
2671	2238 586 59812	100nF 20-80% 50V 0603
2672	2238 586 59812	100nF 20-80% 50V 0603
2673	4822 121 43343	4.7nF 10% 400V
2674	4822 121 41664	22nF 10% 400V
2700	4822 124 80791	470µF 20% 16V
2703	4822 124 80791	470µF 20% 16V
2709	4822 124 80791	470µF 20% 16V

3003	4822 051 30124	120kΩ 5% 0.062W
3003	4822 117 12864	82kΩ 5% 0.6W
3004	4822 051 30153	15kΩ 5% 0.062W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 30472	4.7kΩ 5% 0.062W
3008	4822 051 30102	1kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3010	4822 051 30153	15kΩ 5% 0.062W
3011	4822 051 30561	560Ω 5% 0.062W
3012	4822 051 30472	4.7kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014	4822 116 52191	33Ω 5% 0.5W
3015	4822 116 52176	10Ω 5% 0.5W
3016	4822 051 30102	1kΩ 5% 0.062W
3017	4822 116 52191	33Ω 5% 0.5W
3018	4822 116 52176	10Ω 5% 0.5W
3019	4822 051 30102	1kΩ 5% 0.062W
3020	4822 051 30563	56kΩ 5% 0.062W
3021	4822 053 11478	4Ω 5% 2W
3022	4822 051 30331	330Ω 5% 0.062W
3023	4822 117 12925	47kΩ 1% 0.063W 0603
3024	4822 050 27503	75kΩ 1% 0,6W
3025	4822 117 12903	1.8kΩ 1% 0.063W 0603
3026	4822 101 11186	470Ω 30% 0.1W
3027	4822 117 12925	47kΩ 1% 0.063W 0603
3028	4822 117 10362	7.5kΩ 1% 0,1W
3029	4822 051 30102	1kΩ 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	2322 704 61103	11kΩ 1% 0603
3032	2322 704 61103	11kΩ 1% 0603
3033	4822 051 30222	2.2kΩ 5% 0.062W
3037	4822 051 30103	10kΩ 5% 0.062W
3038	4822 117 13632	100kΩ 1% 0603 0.62W
3039	4822 051 30105	1MΩ 5% 0.062W
3040	4822 117 10837	100kΩ 1% 0.1W
3041	4822 051 30333	33kΩ 5% 0.062W
3042	4822 051 30471	470Ω 5% 0.062W
3043	4822 051 30472	4.7kΩ 5% 0.062W
3044	4822 051 30102	1kΩ 5% 0.062W
3045	4822 051 30102	1kΩ 5% 0.062W
3046	4822 053 20565	5.6MΩ 5% 0.25W
3047	4822 051 30154	150kΩ 5% 0.062W
3048	4822 051 30472	4.7kΩ 5% 0.062W
3049	4822 051 30123	12kΩ 5% 0.062W
3050	4822 052 10398	3.9Ω 5% 0,33W
3051	4822 051 20399	39Ω 5% 0.1W
3053	2322 662 93131	10Ω PTC
3054	4822 050 21003	10kΩ 1% 0.6W
3056	4822 051 30331	330Ω 5% 0.062W
3057	4822 051 30101	100Ω 5% 0.062W
3058	4822 051 20105	1MΩ 5% 0.1W
3062	4822 051 30102	1kΩ 5% 0.062W
3064	4822 051 30103	10kΩ 5% 0.062W
3065	4822 051 30102	1kΩ 5% 0.062W
3066	4822 051 30103	10kΩ 5% 0.062W
3067	4822 051 30153	15kΩ 5% 0.062W
3070	4822 051 30103	10kΩ 5% 0.062W
3071	4822 117 12925	47kΩ 1% 0.063W 0603
3075	4822 116 83866	1MΩ 5% 0.5W
3076	4822 117 13632	100kΩ 1% 0603 0.62W
3077	4822 116 83866	1MΩ 5% 0.5W
3078	4822 117 13632	100kΩ 1% 0603 0.62W
3080	4822 051 30101	100Ω 5% 0.062W
3081	4822 051 30222	2.2kΩ 5% 0.062W
3083	4822 051 10102	1kΩ 2% 0.25W
3084	4822 051 30103	10kΩ 5% 0.062W
3085	4822 117 12925	47kΩ 1% 0.063W 0603
3086	4822 117 12925	47kΩ 1% 0.063W 0603
3087	4822 117 12925	47kΩ 1% 0.063W 0603
3088	4822 117 12925	47kΩ 1% 0.063W 0603
3090	4822 051 30101	100Ω 5% 0.062W
3091	4822 051 30102	1kΩ 5% 0.062W
3092	4822 051 30471	470Ω 5% 0.062W
3093	4822 051 30102	1kΩ 5% 0.062W
3095	4822 051 30471	470Ω 5% 0.062W
3096	4822 051 30562	5.6kΩ 5% 0.063W 0603
3097	4822 117 12968	820Ω 5% 0.62W
3110	4822 051 30102	1kΩ 5% 0.062W
3111	4822 051 30102	1kΩ 5% 0.062W
3112	4822 051 30102	1kΩ 5% 0.062W
3113	4822 051 30474	470kΩ 5% 0.062W
3114	4822 051 20564	560kΩ 5% 0.1W
3115	4822 117 12891	220kΩ 1% 0.063W 0603
3116	4822 051 30102	1kΩ 5% 0.062W
3117	4822 051 30103	10kΩ 5% 0.062W
3118	4822 116 83303	0.1Ω 2W
3119	4822 116 83303	0.1Ω 2W
3120	4822 117 12903	1.8kΩ 1% 0.063W 0603
3121	4822 117 12925	47kΩ 1% 0.063W 0603
3122	2322 734 67503	75kΩ 1% 0.062W 0805
3123	4822 117 10965	18kΩ 1% 0.1W
3124	2120 108 94004	7.5kΩ 1% 0603
3125	2120 108 94004	7.5kΩ 1% 0603
3126	4822 051 30222	2.2kΩ 5% 0.062W
3127	4822 101 11187	1kΩ 30% 0,1W
3128	4822 051 30333	33kΩ 5% 0.062W
3129	4822 053 10103	10kΩ 5% 1W
3130	4822 051 30102	1kΩ 5% 0.062W
3131	2322 704 61103	11kΩ 1% 0603
3133	4822 051 30101	100Ω 5% 0.062W
3134	4822 051 30331	330Ω 5% 0.062W
3135	4822 117 12925	47kΩ 1% 0.063W 0603
3136	4822 117 12925	47kΩ 1% 0.063W 0603
3138	4822 117 11503	220Ω 1% 0.1W
3139	4822 117 11503	220Ω 1% 0.1W
3140	2322 734 67503	75kΩ 1% 0.062W 0805
3141	2322 734 67503	75kΩ 1% 0.062W 0805
3142	5322 117 12487	1kΩ 1% 0.125W
3143	4822 053 11472	4kΩ 5% 2W
3146	2306 327 90035	Jump. 0.22Ω
3147	2322 704 61103	11kΩ 1% 0603
3148	4822 117 12925	47kΩ 1% 0.063W 0603
3149	4822 051 30103	10kΩ 5% 0.062W
3150	4822 117 10837	100kΩ 1% 0.1W
3151	4822 051 30103	10kΩ 5% 0.062W
3152	4822 117 11373	100Ω 1% 0805
3200	2322 730 61224	220kΩ 5% 0.062W 0805
3201	4822 053 10103	10kΩ 5% 1W
3202	4822 051 30479	47Ω 5% 0.062W
3203	4822 051 30101	100Ω 5% 0.062W
3204	4822 117 13632	100kΩ 1% 0603 0.62W
3205	4822 117 13632	100kΩ 1% 0603 0.62W
3212	4822 051 30102	1kΩ 5% 0.062W
3213	4822 051 30105	1MΩ 5% 0.062W
3214	4822 117 12889	270kΩ 1% 0.063W 0603
3216	4822 051 30102	1kΩ 5% 0.062W
3217	4822 051 30103	10kΩ 5% 0.062W
3218	4822 116 83303	0.1Ω 2W
3219	4822 116 83303	0.1Ω 2W
3224	5322 117 13028	12kΩ 1% 0.063W 0603
3225	2322 704 61103	11kΩ 1% 0603
3226	4822 051 30103	10kΩ 5% 0.062W
3228	4822 051 30151	150Ω 5% 0.062W
3240	4822 051 30102	1kΩ 5% 0.062W
3241	4822 051 30102	1kΩ 5% 0.062W
3260	4822 051 30102	1kΩ 5% 0.062W
3261	4822 051 30102	1kΩ 5% 0.062W
3262	4822 117 11188	20kΩ 1% 0,1W
3264	4822 051 30682	6.8kΩ 5% 0.062W
3265	4822 051 30102	1kΩ 5% 0.062W
3268	4822 051 30102	1kΩ 5% 0.062W
3292	4822 051 30561	560Ω 5% 0.062W
3300	4822 117 13579	220kΩ 1% 0.1W 0805
3301	4822 117 13579	220kΩ 1% 0.1W 0805
3302	2312 916 71004	100kΩ 1%
3303	2312 916 71004	100kΩ 1%
3304	4822 051 30102	1kΩ 5% 0.062W
3305	2312 916 76202	6.2kΩ 1%
3306	2322 704 61103	11kΩ 1% 0603
3307	2322 704 61103	11kΩ 1% 0603
3307	5322 117 13028	12kΩ 1% 0.063W 0603
3308	4822 051 30102	1kΩ 5% 0.062W
3309	4822 051 30102	1kΩ 5% 0.062W
3310	4822 051 30472	4.7kΩ 5% 0.062W
3311	4822 117 13579	220kΩ 1% 0.1W 0805
3312	4822 051 30102	1kΩ 5% 0.062W
3313	2120 108 94004	7.5kΩ 1% 0603
3316	2312 916 77502	7.5kΩ 1%
3317	2120 108 94004	7.5kΩ 1% 0603
3318	4822 051 30102	1kΩ 5% 0.062W
3319	4822 051 30472	4.7kΩ 5% 0.062W
3320	2322 704 61103	11kΩ 1% 0603
3320	4822 117 10833	10kΩ 1% 0.1W
3321	4822 051 30102	1kΩ 5% 0.062W
3322	4822 117 10833	10kΩ 1% 0.1W
3322	5322 117 13042	3.9kΩ 1% 0.063W 0603
3323	4822 117 10833	10kΩ 1% 0.1W
3323	5322 117 13028	12kΩ 1% 0.063W 0603
3324	4822 051 30102	1kΩ 5% 0.062W
3325	4822 051 30471	470Ω 5% 0.062W
3326	4822 051 30472	4.7kΩ 5% 0.062W
3327	4822 051 30103	10kΩ 5% 0.062W
3328	4822 051 30103	10kΩ 5% 0.062W
3330	4822 051 30102	1kΩ 5% 0.062W
3331	4822 051 30472	4.7kΩ 5% 0.062W
3332	4822 117 11144	3.9kΩ 1% 0.1W
3333	4822 051 30102	1kΩ 5% 0.062W
3334	4822 117 12955	2.7kΩ 1% 0.1W 0805
3335	4822 116 83933	15kΩ 1% 0.1W
3338	4822 051 30102	1kΩ 5% 0.062W
3339	4822 051 30472	4.7kΩ 5% 0.062W
3340	4822 051 30102	1kΩ 5% 0.062W
3341	4822 051 30103	10kΩ 5% 0.062W
3342	4822 051 30103	10kΩ 5% 0.062W
3343	4822 051 30102	1kΩ 5% 0.062W
3344	4822 051 30102	1kΩ 5% 0.062W
3345	4822 051 30472	4.7kΩ 5% 0.062W
3346	4822 051 30102	1kΩ 5% 0.062W
3347	4822 051 30331	330Ω 5% 0.062W
3348	4822 051 30331	330Ω 5% 0.062W
3349	4822 051 30102	1kΩ 5% 0.062W
3350	4822 051 30472	4.7kΩ 5% 0.062W
3351	4822 051 30103	10kΩ 5% 0.062W
3352	4822 051 30103	10kΩ 5% 0.062W
3353	4822 051 30103	10kΩ 5% 0.062W
3354	4822 051 30472	4.7kΩ 5% 0.062W
3358	4822 051 30222	2.2kΩ 5% 0.062W
3359	4822 051 30472	4.7kΩ 5% 0.062W
3360	4822 117 11817	1.2kΩ 1% 1/16W
3361	4822 051 30472	4.7kΩ 5% 0.062W
3362	4822 051 30102	1kΩ 5% 0.062W
3363	4822 051 30102	1kΩ 5% 0.062W
3364	4822 051 30102	1kΩ 5% 0.062W
3365	4822 051 30102	1kΩ 5% 0.062W
3366	4822 051 30103	10kΩ 5% 0.062W
3367	4822 051 30103	10kΩ 5% 0.062W
3368	2120 660 90042	PTC 330Ω 16V
3369	4822 051 30272	2.7kΩ 5% 0.062W
3370	4822 051 30101	100Ω 5% 0.062W
3371	4822 051 30101	100Ω 5% 0.062W
3372	9337 224 50116	Temp sens. KTY81-210
3372	9337 224 60116	Temp sens. KTY81-220
3373	4822 051 30472	4.7kΩ 5% 0.062W
3374	4822 117 12925	47kΩ 1% 0.063W 0603
3376	4822 117 12925	47kΩ 1% 0.063W 0603
3377	4822 051 30472	4.7kΩ 5% 0.062W
3378	4822 051 30103	10kΩ 5% 0.062W
3380	4822 117 12925	47kΩ 1% 0.063W 0603
3381	4822 117 12925	47kΩ 1% 0.063W 0603
3382	5322 117 13039	222kΩ 1% 0.063W 0603
3385	4822 117 13632	100kΩ 1% 0603 0.62W
3386	4822 117 13632	100kΩ 1% 0603 0.62W
3387	4822 051 30471	470Ω 5% 0.062W
3388	4822 051 30102	1kΩ 5% 0.062W
3389	4822 051 30102	1kΩ 5% 0.062W
3390	4822 051 30103	10kΩ 5% 0.062W
3391	4822 051 30103	10kΩ 5% 0.062W
3392	4822 051 30102	1kΩ 5% 0.062W
3393	4822 051 30103	10kΩ 5% 0.062W
3394	4822 051 30102	1kΩ 5% 0.062W
3395	4822 051 30103	10kΩ 5% 0.062W
3396	2312 916 71004	100kΩ 1%
3397	2312 916 71004	100kΩ 1%
3400	2322 595 90021	VDR 1mA/495V 850V
3401	4822 117 10118	1MΩ 5% 0,5W
3402	4822 053 21475	4.7MΩ 5% 0,5W
3403	4822 053 21475	4.7MΩ 5% 0,5W
3404	4822 116 83872	220Ω 5% 0.5W
3450	2322 662 93131	10Ω PTC
3451	2322 662 93131	10Ω PTC
3452	2122 612 00051	NTC 1Ω 20%
3453	2122 612 00051	NTC 1Ω 20%
3460	4822 051 30472	4.7kΩ 5% 0.062W
3461	4822 051 30103	10kΩ 5% 0.062W
3463	4822 051 30103	10kΩ 5% 0.062W
3465	4822 051 30103	10kΩ 5% 0.062W
3467	4822 051 30103	10kΩ 5% 0.062W
3469	4822 051 30472	4.7kΩ 5% 0.062W
3470	4822 051 30103	10kΩ 5% 0.062W
3501	4822 051 30101	100Ω 5% 0.062W
3502	4822 051 30471	470Ω 5% 0.062W
3503	5322 117 13026	4.7kΩ 1% 0.063W 0603
3503	5322 117 13042	3.9kΩ 1% 0.063W 0603
3504	5322 117 13024	33kΩ 1% 0.063W 0603
3505	4822 117 11139	1.5kΩ 1% 0.1W
3506	2322 662 93131	10Ω PTC
3507	4822 053 20225	2.2MΩ 5% 0.25W
3508	2322 194 63109	10Ω 5% 2W
3520	4822 051 30109	10Ω 5% 0.062W
3530	4822 117 13632	100kΩ 1% 0603 0.62W
3608	4822 116 52179	12Ω 5% 0,5W
3610	5322 116 53564	3.3Ω 5% 0.5W
3611	4822 050 11002	1kΩ 1% 0.4W
3614	2120 106 90565	0.1Ω 5% 1W
3615	2120 106 90565	0.1Ω 5% 1W
3639	4822 051 30102	1kΩ 5% 0.062W
3640	4822 051 30331	330Ω 5% 0.062W
3641	4822 051 30471	470Ω 5% 0.062W
3642	4822 051 30101	100Ω 5% 0.062W
3650	2322 156 21305	1.3MΩ 1% 0,25W
3651	4822 051 30103	10kΩ 5% 0.062W
3652	4822 051 30105	1MΩ 5% 0.062W
3653	4822 116 52231	820Ω 5% 0.5W
3654	4822 051 30103	10kΩ 5% 0.062W
3655	4822 051 30102	1kΩ 5% 0.062W
3663	4822 052 10108	1Ω 5% 0.33W
3664	2322 734 62704	270kΩ 1% 0.1W 0805

3665	4822 051 30103	10kΩ 5% 0.062W
3666	4822 116 52175	100Ω 5% 0.5W
3667	4822 051 30103	10kΩ 5% 0.062W
3668	4822 052 11102	1kΩ 5% 0,5W
3670	4822 050 27504	750kΩ 1% 0,6W
3671	4822 117 10833	10kΩ 1% 0.1W
3673	4822 052 11102	1kΩ 5% 0,5W
3674	4822 053 20105	1MΩ 5% 0,25W
3675	4822 053 10221	220Ω 5% 1W
3676	4822 053 10471	470Ω 5% 1W
3676	4822 053 11471	470Ω 5% 2W
3700	4822 051 30331	330Ω 5% 0.062W
3701	4822 051 30222	2.2kΩ 5% 0.062W
3702	4822 051 30222	2.2kΩ 5% 0.062W
3703	4822 051 30102	1kΩ 5% 0.062W
3706	4822 051 30331	330Ω 5% 0.062W
3707	4822 051 30222	2.2kΩ 5% 0.062W
3708	4822 051 30222	2.2kΩ 5% 0.062W
3709	4822 051 30102	1kΩ 5% 0.062W
3999	4822 051 30102	1kΩ 5% 0.062W
4261	4822 051 30008	Jumper 0603
4268	4822 051 30008	Jumper 0603
4300	4822 051 30008	Jumper 0603

5001	3128 138 38561	Transformer CE136H
5001	8222 289 53691	Driver transf. CE136H
5002⚠	3128 138 40821	Transformer CE423D
5003	4822 157 71442	150μH 10%
5004⚠	3128 138 40821	Transformer CE423D
5120	3128 138 40381	Inductor Coil CU20V
5200	3198 018 71010	100μF 10%
5220	3128 138 70541	Transformer CT296F
5224	2422 535 95273	6.8μH 20%
5225	2422 535 95273	6.8μH 20%
5260	3198 018 71010	100μF 10%
5268	2422 536 00288	100μH 10%
5290	3128 138 40391	Transformer CU15
5291	4822 157 71467	39μH 10%
5292	4822 157 71467	39μH 10%
5293	4822 157 71467	39μH 10%
5401⚠	3122 138 38901	Mains filter CU28D3
5402⚠	3122 138 38901	Mains filter CU28D3
5403	8228 001 32681	Filter U20 DIFF. mode
5404⚠	3122 138 38901	Mains filter CU28D3
5500⚠	3128 138 40361	Transformer CE165T
5505	4822 157 71467	39μH 10%
5600	3128 138 41031	Transformer CE423D
5612	4822 157 11411	Bead 83Ω at 100MHz
5703	4822 157 71414	1000μH 10%
5704	4822 157 11499	BLM11P600SPT
5709	4822 157 71414	1000μH 10%
5710	4822 157 11499	BLM11P600SPT

6004	4822 130 11397	BAS316
6005	4822 130 11397	BAS316
6007	4822 130 30621	1N4148
6008	4822 130 30621	1N4148
6009	4822 130 11397	BAS316
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	4822 130 34281	BZX79-B15
6013	4822 130 34281	BZX79-B15
6018	4822 130 11397	BAS316
6019	4822 130 11397	BAS316
6021	9340 550 66112	BYV28-200/24
6022	4822 130 11397	BAS316
6023	4822 130 11397	BAS316
6027	4822 130 30621	1N4148
6028	4822 130 30621	1N4148
6031	9322 129 37685	BZM55-C5V6
6032	9322 129 37685	BZM55-C5V6
6033	4822 130 11594	BZX284-C47
6034	4822 130 11397	BAS316
6035	4822 130 11397	BAS316
6041	9322 167 08687	STTH2003CF
6042	9322 150 18685	BZX384-C47
6043	5322 130 31938	BYV27-200
6044	9322 167 08687	STTH2003CF
6045	9340 550 66112	BYV28-200/24
6046	9322 167 08687	STTH2003CF
6047	9322 167 08687	STTH2003CF
6050	4822 130 31024	BZX79-B18
6054	4822 130 41601	BYV95A
6054	4822 130 42488	BYD33D
6055	4822 130 41601	BYV95A
6055	4822 130 42488	BYD33D
6061	4822 130 31024	BZX79-B18
6075	9336 018 60133	BZT03-C300
6077	9336 018 60133	BZT03-C300
6086	4822 130 11397	BAS316
6086	4822 130 83757	BAS216
6095	4822 130 11397	BAS316
6111	4822 130 11397	BAS316
6112	4822 130 11397	BAS316
6113	4822 130 11397	BAS316
6117	4822 130 11152	UDZ18B
6120	4822 130 11596	BYW29EX-200
6123	4822 130 11397	BAS316
6133	4822 130 11397	BAS316
6142	9340 550 66112	BYV28-200/24
6202	4822 130 11397	BAS316
6205	4822 130 11152	UDZ18B
6206	4822 130 11397	BAS316
6211	9322 128 65685	RS1G
6213	4822 130 11397	BAS316
6216	4822 130 11152	UDZ18B
6224	9322 173 47687	STPS20L40CFP
6225	9322 173 47687	STPS20L40CFP
6230	5322 130 31938	BYV27-200
6230	9340 550 66112	BYV28-200/24
6232	4822 130 11522	UDZ15B
6260	4822 130 11421	BT151X-500R
6267	9322 161 77682	SB540L-7024
6291	9322 131 78682	D4SBL20
6312	4822 130 11528	1PS76SB10
6313	4822 130 11528	1PS76SB10
6314	4822 130 11397	BAS316
6321	4822 130 11528	1PS76SB10
6322	4822 130 11528	1PS76SB10
6324	4822 130 11397	BAS316
6325	4822 130 11416	PDZ6.8B
6333	4822 130 11528	1PS76SB10
6334	4822 130 11528	1PS76SB10
6335	4822 130 11397	BAS316
6340	4822 130 11528	1PS76SB10
6341	4822 130 11528	1PS76SB10
6342	4822 130 11397	BAS316
6344	4822 130 10838	UDZ3.3B
6347	4822 130 10654	BAT254
6348	4822 130 20297	BT169B
6362	4822 130 11397	BAS316
6364	4822 130 11397	BAS316
6365	4822 130 11397	BAS316
6375	4822 130 11397	BAS316
6376	4822 130 11397	BAS316
6378	4822 130 11528	1PS76SB10
6390	4822 130 11397	BAS316
6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6470	4822 130 11397	BAS316
6471	4822 130 11397	BAS316
6501	9336 018 60133	BZT03-C300
6502	9336 018 60133	BZT03-C300
6503	9322 128 65685	RS1G
6504	9322 128 65685	RS1G
6505	9322 161 76682	SB340L-7024
6510	9322 099 61685	BYG10J
6511	9322 099 61685	BYG10J
6512	9322 099 61685	BYG10J
6513	9322 099 61685	BYG10J
6520	4822 130 11397	BAS316
6530	4822 130 11152	UDZ18B
6531	4822 130 11152	UDZ18B
6600	9322 131 67679	GBU8JL-7000
6605	9322 161 81682	1N5406L-7024
6606	9322 161 81682	1N5406L-7024
6608	4822 130 11397	BAS316
6609	4822 130 32152	BZT03-C18
6611	3139 120 52021	BYV29X-500
6640	9339 680 20115	PRLL5819
6641	4822 130 11397	BAS316
6642	9339 680 20115	PRLL5819
6643	4822 130 11152	UDZ18B
6651	9339 680 20115	PRLL5819
6653	9322 129 39685	BZM55-C8V2
6654	4822 130 11397	BAS316
6660	9322 128 65685	RS1G
6661	9322 128 65685	RS1G
6663	4822 130 11397	BAS316
6665	9339 680 20115	PRLL5819
6700	4822 130 11152	UDZ18B
6703	9339 680 20115	PRLL5819
6706	4822 130 11152	UDZ18B
6709	9339 680 20115	PRLL5819

7001	9322 108 21682	MC34067P
7002⚠	9322 149 04682	TCET1102
7003⚠	9322 149 04682	TCET1102
7005	9322 164 01687	STU16NB50I
7005	9322 192 18687	STP15NK50ZFP
7006	9322 164 01687	STU16NB50I
7006	9322 192 18687	STP15NK50ZFP
7007	4822 130 40854	BC327
7008	4822 130 40854	BC327
7009	3198 010 42310	BC847BW
7010	4822 209 81397	TL431CLPST
7011	4822 209 81397	TL431CLPST
7017	3198 010 42320	BC857BW
7018	3198 010 42310	BC847BW
7020	9335 671 30126	BC517
7021	9335 671 30126	BC517
7022	3198 010 42310	BC847BW
7042	4822 130 41646	BF423
7050	9340 557 17118	PSMN035-150B
7052	9322 165 02668	IRFR18N15D
7058	3198 010 42310	BC847BW
7059	4822 130 41782	BF422
7090	3198 010 42320	BC857BW
7091	3198 010 42320	BC857BW
7092	4822 130 41246	BC327-25
7093	4822 209 80591	LM317T
7110	4822 130 41646	BF423
7111	4822 130 41646	BF423
7112	9352 673 56112	TEA1507P/N1
7117	9340 557 17118	PSMN035-150B
7120	9322 149 04682	TCET1102
7121	4822 209 81397	TL431CLPST
7130	4822 209 81397	TL431CLPST
7134	3198 010 42310	BC847BW
7140	9340 425 10115	BC857BS
7142	4822 130 41646	BF423
7143	3198 010 42310	BC847BW
7144	4822 130 41782	BF422
7145	3198 010 42320	BC857BW
7200	4822 130 63316	BSN304
7202	9965 000 04199	BSN20
7212	9352 673 56112	TEA1507P/N1
7217	9340 557 18127	PSMN070-200P
7220	9322 149 04682	TCET1102
7227	4822 209 81397	TL431CLPST
7230	4822 209 12334	L4940V85
7260	9322 166 31682	IC L4973V3.3
7304	4822 209 81397	TL431CLPST
7308	4822 209 60177	LM339D
7326	3198 010 42310	BC847BW
7327	3198 010 42310	BC847BW
7330	4822 209 60177	LM339D
7341	3198 010 42320	BC857BW
7348	3198 010 42310	BC847BW
7351	3198 010 42310	BC847BW
7352	3198 010 42310	BC847BW
7362	3198 010 42310	BC847BW
7366	4822 209 63709	LM324D
7370	5322 209 33172	PCF8574AT
7375	3198 010 42310	BC847BW
7376	3198 010 42310	BC847BW
7389	3198 010 42320	BC857BW
7391	3198 010 42320	BC857BW
7393	3198 010 42310	BC847BW
7460	4822 130 42804	BC817-25
7460	9340 219 30115	BC817-25W
7465	3198 010 42320	BC857BW
7470	4822 130 42804	BC817-25
7470	9340 219 30115	BC817-25W
7500	9322 037 99682	TNY256P
7501⚠	9322 149 04682	TCET1102
7502	4822 209 14933	TL431IZ
7530	9322 157 95668	STD16NE06L
7531	9322 157 95668	STD16NE06L
7540	4822 209 80817	L7805CV
7608	5322 130 44593	BC369
7610	9322 130 47687	STY34NB50
7640	4822 130 63316	BSN304
7641	4822 130 40981	BC337-25
7650	9322 130 69682	IC MC33368P
7654	3198 010 42320	BC857BW
7660	5322 209 71759	MCT7815CT
7700	9322 115 29668	SI9433DY
7701	3198 010 42310	BC847BW
7706	9322 115 29668	SI9433DY
7707	3198 010 42310	BC847BW

SCAVIO Panel [SC]

Various

0020	3122 128 13681	Conn. plate base
0252	3122 121 67261	Earth sheet
0301	2422 025 17396	Connector 20P m
0305	2422 025 16705	Connector 12P m
0318	2422 025 17233	Connector 32P f

0319	2422 025 17047	Connector 13P m
0320	2422 015 19565	D-lock 12.7mm
0320	2422 025 16545	Connector 10P m
0376	2422 025 16768	Connector 9P f
0378	2422 026 05071	Socket 4P f Wh/Rd
0382	2422 025 17274	Connector 10P m
0385	2422 025 17274	Connector 10P m
0388	2422 025 16704	Connector 8P m
0600	3122 357 00421	Software (check Prod.Surv.)
0601	3122 357 00382	Software (check Prod. surv.)
0603	3122 357 00285	Software (check Prod.Surv.)
1032	3122 357 21643	VGA Connector panel
1061⚠	3122 358 76342	Mains inlet unit
1063	3122 357 22061	PCA SCAVIO basic
1100⚠	2422 086 11009	Fuse T1.A 63V 2410
1105⚠	2422 086 11092	Fuse F0.5A 50V 1206
1170⚠	2422 086 11092	Fuse F0.5A 50V 1206
1171⚠	2422 086 11013	Fuse F0.315A 32V 1206
1415	2422 543 89022	Xtal 6MHz 20pF CX5F
1570	2422 543 01115	Crystal 24.576MHz
1575⚠	2422 086 11092	Fuse F0.5A 50V 1206
1670⚠	2422 086 10964	Fuse T0.630A 63V
8305	3104 311 05181	Cable 12P/315/12P
8318	3122 358 76621	Foil S18-V18
8319	3104 311 04231	Cable 13P/120/13P
8391	3122 358 76331	Tree assy M91-CP91

⊣⊢

2142	2238 586 59812	100nF 20-80% 50V 0603
2143	4822 124 12095	100µF 20% 16V
2144	5322 124 41945	22µF 20% 35V
2146	3198 017 34730	47nF 16V 0603
2150	5322 124 41945	22µF 20% 35V
2151	3198 016 31020	1nF 10% 25V 0603
2152	3198 017 34730	47nF 16V 0603
2156	5322 124 41945	22µF 20% 35V
2158	3198 017 34730	47nF 16V 0603
2162	2238 586 59812	100nF 20-80% 50V 0603
2164	4822 124 12095	100µF 20% 16V
2165	2238 586 59812	100nF 20-80% 50V 0603
2166	2238 586 59812	100nF 20-80% 50V 0603
2167	4822 124 12095	100µF 20% 16V
2170	2238 586 59812	100nF 20-80% 50V 0603
2171	2238 586 59812	100nF 20-80% 50V 0603
2172	2238 586 59812	100nF 20-80% 50V 0603
2173	2238 586 59812	100nF 20-80% 50V 0603
2174	2238 586 59812	100nF 20-80% 50V 0603
2175	2238 586 59812	100nF 20-80% 50V 0603
2176	2238 586 59812	100nF 20-80% 50V 0603
2177	2238 586 59812	100nF 20-80% 50V 0603
2178	2238 586 59812	100nF 20-80% 50V 0603
2179	2238 586 59812	100nF 20-80% 50V 0603
2180	2238 586 59812	100nF 20-80% 50V 0603
2181	2238 586 59812	100nF 20-80% 50V 0603
2182	2238 586 59812	100nF 20-80% 50V 0603
2183	2238 586 59812	100nF 20-80% 50V 0603
2184	2238 586 59812	100nF 20-80% 50V 0603
2185	2238 586 59812	100nF 20-80% 50V 0603
2186	2238 586 59812	100nF 20-80% 50V 0603
2187	2238 586 59812	100nF 20-80% 50V 0603
2188	2238 586 59812	100nF 20-80% 50V 0603
2189	2238 586 59812	100nF 20-80% 50V 0603
2190	2238 586 59812	100nF 20-80% 50V 0603
2191	2238 586 59812	100nF 20-80% 50V 0603
2192	2238 586 59812	100nF 20-80% 50V 0603
2193	2238 586 59812	100nF 20-80% 50V 0603
2195	4822 124 23002	10µF 20% 16V
2196	4822 124 23002	10µF 20% 16V
2197	4822 124 23002	10µF 20% 16V
2198	4822 124 23002	10µF 20% 16V
2199	4822 124 23002	10µF 20% 16V
2205	2238 586 59812	100nF 20-80% 50V 0603
2206	2238 586 59812	100nF 20-80% 50V 0603
2207	2238 586 59812	100nF 20-80% 50V 0603
2208	4822 126 14127	39nF 10% 50V 0805
2210	5322 126 11581	3.9nF 10% 63V 0603
2212	2238 586 59812	100nF 20-80% 50V 0603
2300	4822 124 12095	100µF 20% 16V
2301	2238 586 59812	100nF 20-80% 50V 0603
2302	4822 124 23002	10µF 20% 16V
2304	2238 586 59812	100nF 20-80% 50V 0603
2308	5322 124 41945	22µF 20% 35V
2310	2238 586 59812	100nF 20-80% 50V 0603
2311	2238 586 59812	100nF 20-80% 50V 0603
2318	5322 124 41945	22µF 20% 35V
2328	5322 124 41945	22µF 20% 35V
2337	2020 552 94427	100pF 5% 50v 0603
2340	2238 586 59812	100nF 20-80% 50V 0603
2351	2238 586 59812	100nF 20-80% 50V 0603
2352	2238 586 59812	100nF 20-80% 50V 0603
2353	4822 124 23002	10µF 20% 16V
2354	2238 586 59812	100nF 20-80% 50V 0603
2355	2238 586 59812	100nF 20-80% 50V 0603
2356	2238 586 59812	100nF 20-80% 50V 0603
2370	2238 586 59812	100nF 20-80% 50V 0603
2372	2238 586 59812	100nF 20-80% 50V 0603
2375	2238 586 59812	100nF 20-80% 50V 0603
2381	2238 586 59812	100nF 20-80% 50V 0603
2382	2238 586 59812	100nF 20-80% 50V 0603
2383	2238 586 59812	100nF 20-80% 50V 0603
2415	2238 867 75339	33pF 5% 50V 0603
2416	4822 126 11669	27pF 5% 50V 0603
2418	3198 016 31020	1nF 10% 25V 0603
2419	3198 016 31020	1nF 10% 25V 0603
2420	2238 586 59812	100nF 20-80% 50V 0603
2432	2238 586 59812	100nF 20-80% 50V 0603
2433	2238 586 59812	100nF 20-80% 50V 0603
2434	2238 586 59812	100nF 20-80% 50V 0603
2435	2238 586 59812	100nF 20-80% 50V 0603
2436	2238 586 59812	100nF 20-80% 50V 0603
2437	2238 586 59812	100nF 20-80% 50V 0603
2438	4822 126 13879	220nF 20% 16V
2439	4822 126 13879	220nF 20% 16V
2446	2238 586 59812	100nF 20-80% 50V 0603
2447	2238 586 59812	100nF 20-80% 50V 0603
2448	2238 586 59812	100nF 20-80% 50V 0603
2499	2238 586 59812	100nF 20-80% 50V 0603
2500	2238 586 59812	100nF 20-80% 50V 0603
2501	4822 126 14226	82pF 5% 50V 0603
2502	4822 126 14226	82pF 5% 50V 0603
2503	4822 126 14226	82pF 5% 50V 0603
2504	4822 126 14226	82pF 5% 50V 0603
2505	4822 126 14226	82pF 5% 50V 0603
2506	2238 586 59812	100nF 20-80% 50V 0603
2511	2238 586 59812	100nF 20-80% 50V 0603
2513	2238 586 59812	100nF 20-80% 50V 0603
2515	2238 586 59812	100nF 20-80% 50V 0603
2520	4822 124 23002	10µF 20% 16V
2521	4822 124 23002	10µF 20% 16V
2522	4822 124 23002	10µF 20% 16V
2523	4822 124 23002	10µF 20% 16V
2524	4822 124 23002	10µF 20% 16V
2530	5322 124 41945	22µF 20% 35V
2531	2238 586 59812	100nF 20-80% 50V 0603
2533	2238 586 59812	100nF 20-80% 50V 0603
2534	2238 586 59812	100nF 20-80% 50V 0603
2535	2238 586 59812	100nF 20-80% 50V 0603
2537	2238 586 59812	100nF 20-80% 50V 0603
2538	3198 016 31020	1nF 10% 25V 0603
2541	2238 586 59812	100nF 20-80% 50V 0603
2546	3198 016 31020	1nF 10% 25V 0603
2547	3198 016 31020	1nF 10% 25V 0603
2548	3198 016 31020	1nF 10% 25V 0603
2550	3198 016 31020	1nF 10% 25V 0603
2551	3198 016 31020	1nF 10% 25V 0603
2552	3198 016 31020	1nF 10% 25V 0603
2553	3198 016 31020	1nF 10% 25V 0603
2554	2238 586 59812	100nF 20-80% 50V 0603
2555	2238 586 59812	100nF 20-80% 50V 0603
2557	3198 016 31020	1nF 10% 25V 0603
2558	3198 016 31020	1nF 10% 25V 0603
2559	3198 016 31020	1nF 10% 25V 0603
2560	3198 016 31020	1nF 10% 25V 0603
2562	3198 016 31020	1nF 10% 25V 0603
2563	3198 016 31020	1nF 10% 25V 0603
2564	3198 016 31020	1nF 10% 25V 0603
2565	3198 016 31020	1nF 10% 25V 0603
2566	3198 016 31020	1nF 10% 25V 0603
2570	3198 016 31020	1nF 10% 25V 0603
2572	2238 586 59812	100nF 20-80% 50V 0603
2573	4822 124 23002	10µF 20% 16V
2574	2238 586 59812	100nF 20-80% 50V 0603
2581	2238 586 59812	100nF 20-80% 50V 0603
2583	2238 586 59812	100nF 20-80% 50V 0603
2584	2238 586 59812	100nF 20-80% 50V 0603
2600	2238 586 59812	100nF 20-80% 50V 0603
2601	2238 586 59812	100nF 20-80% 50V 0603
2602	2238 586 59812	100nF 20-80% 50V 0603
2603	2238 586 59812	100nF 20-80% 50V 0603
2604	2238 586 59812	100nF 20-80% 50V 0603
2605	2238 586 59812	100nF 20-80% 50V 0603
2606	2238 586 59812	100nF 20-80% 50V 0603
2607	2238 586 59812	100nF 20-80% 50V 0603
2608	2238 586 59812	100nF 20-80% 50V 0603
2609	2238 586 59812	100nF 20-80% 50V 0603
2610	2238 586 59812	100nF 20-80% 50V 0603
2611	2238 586 59812	100nF 20-80% 50V 0603
2612	2238 586 59812	100nF 20-80% 50V 0603
2613	2238 586 59812	100nF 20-80% 50V 0603
2614	2238 586 59812	100nF 20-80% 50V 0603
2615	2238 586 59812	100nF 20-80% 50V 0603
2616	2238 586 59812	100nF 20-80% 50V 0603
2617	2238 586 59812	100nF 20-80% 50V 0603
2618	2238 586 59812	100nF 20-80% 50V 0603
2619	2238 586 59812	100nF 20-80% 50V 0603
2620	2238 586 59812	100nF 20-80% 50V 0603
2621	2238 586 59812	100nF 20-80% 50V 0603
2622	2238 586 59812	100nF 20-80% 50V 0603
2623	2238 586 59812	100nF 20-80% 50V 0603
2624	2238 586 59812	100nF 20-80% 50V 0603
2625	2238 586 59812	100nF 20-80% 50V 0603
2628	2238 586 59812	100nF 20-80% 50V 0603
2629	4822 122 33741	10pF 10% 50V
2630	2238 586 59812	100nF 20-80% 50V 0603
2640	2238 586 59812	100nF 20-80% 50V 0603
2641	3198 016 31020	1nF 10% 25V 0603
2642	4822 124 23002	10µF 20% 16V
2643	4822 124 23002	10µF 20% 16V
2644	4822 124 23002	10µF 20% 16V
2645	4822 124 23002	10µF 20% 16V
2646	4822 124 23002	10µF 20% 16V
2647	4822 124 23002	10µF 20% 16V
2648	4822 124 23002	10µF 20% 16V
2649	4822 124 23002	10µF 20% 16V
2655	2238 586 59812	100nF 20-80% 50V 0603
2656	2238 586 59812	100nF 20-80% 50V 0603
2657	2238 586 59812	100nF 20-80% 50V 0603
2658	2238 586 59812	100nF 20-80% 50V 0603
2659	2238 586 59812	100nF 20-80% 50V 0603
2660	2238 586 59812	100nF 20-80% 50V 0603
2661	2238 586 59812	100nF 20-80% 50V 0603
2662	2238 586 59812	100nF 20-80% 50V 0603
2663	2238 586 59812	100nF 20-80% 50V 0603
2670	2238 586 59812	100nF 20-80% 50V 0603
2671	2238 586 59812	100nF 20-80% 50V 0603
2672	2238 586 59812	100nF 20-80% 50V 0603
2673	2238 586 59812	100nF 20-80% 50V 0603
2674	2238 586 59812	100nF 20-80% 50V 0603
2694	3198 016 31080	1pF 25% 50V 0603
2695	3198 016 31080	1pF 25% 50V 0603
2696	3198 016 31080	1pF 25% 50V 0603
2697	3198 016 31080	1pF 25% 50V 0603
2698	3198 016 31080	1pF 25% 50V 0603
2699	3198 016 31080	1pF 25% 50V 0603
2711	2020 552 94427	100pF 5% 50v 0603
2712	4822 126 14472	1µF 10% 10V 0805
2715	2238 586 59812	100nF 20-80% 50V 0603
2716	4822 126 11785	47pF 5% 50V 0603
2717	4822 126 14472	1µF 10% 10V 0805
2721	2020 552 94427	100pF 5% 50v 0603
2722	4822 126 14472	1µF 10% 10V 0805
2726	4822 126 11785	47pF 5% 50V 0603
2727	4822 126 14472	1µF 10% 10V 0805
2731	2020 552 94427	100pF 5% 50v 0603
2741	2020 552 94427	100pF 5% 50v 0603
2799	5322 124 41945	22µF 20% 35V
2800	4822 124 12095	100µF 20% 16V
2802	4822 124 23002	10µF 20% 16V
2803	4822 124 23002	10µF 20% 16V
2804	3198 016 31020	1nF 10% 25V 0603
2810	4822 124 12095	100µF 20% 16V
2811	3198 016 31020	1nF 10% 25V 0603
2812	3198 016 31020	1nF 10% 25V 0603
2813	3198 016 31020	1nF 10% 25V 0603
2814	4822 126 14585	100nF 10% 50V
2815	3198 016 31020	1nF 10% 25V 0603
2816	4822 124 23002	10µF 20% 16V
2817	2238 586 59812	100nF 20-80% 50V 0603
2818	3198 016 31020	1nF 10% 25V 0603
2819	3198 016 31020	1nF 10% 25V 0603
2820	4822 124 23002	10µF 20% 16V
2821	4822 124 23002	10µF 20% 16V
2822	4822 126 14247	1.5nF 50V 0603
2823	4822 124 23002	10µF 20% 16V
2824	4822 126 14247	1.5nF 50V 0603
2825	3198 016 31020	1nF 10% 25V 0603
2826	4822 126 14472	1µF 10% 10V 0805
2827	4822 126 14472	1µF 10% 10V 0805
2828	3198 016 31020	1nF 10% 25V 0603
2829	4822 124 23002	10µF 20% 16V
2830	2238 586 59812	100nF 20-80% 50V 0603
2831	2238 586 59812	100nF 20-80% 50V 0603
2833	4822 126 14247	1.5nF 50V 0603
2834	4822 124 23002	10µF 20% 16V
2837	4822 126 13881	470pF 5% 50V
2838	4822 126 13881	470pF 5% 50V
2839	4822 126 13881	470pF 5% 50V
2840	4822 126 11669	27pF 5% 50V 0603
2842	2238 586 59812	100nF 20-80% 50V 0603
2843	4822 126 11669	27pF 5% 50V 0603
2844	3198 016 31020	1nF 10% 25V 0603
2845	4822 126 13883	220pF 5% 50V
2848	4822 126 11669	27pF 5% 50V 0603
2849	3198 016 31020	1nF 10% 25V 0603
2850	4822 126 11669	27pF 5% 50V 0603
2852	2238 586 59812	100nF 20-80% 50V 0603
2853	4822 126 11669	27pF 5% 50V 0603

2854	3198 016 31020	1nF 10% 25V 0603
2857	3198 016 31020	1nF 10% 25V 0603
2858	4822 126 11669	27pF 5% 50V 0603
2861	2238 586 59812	100nF 20-80% 50V 0603
2862	4822 126 11785	47pF 5% 50V 0603
2863	4822 126 14472	1μF 10% 10V 0805
2865	4822 126 11785	47pF 5% 50V 0603
2867	4822 126 13879	220nF 20% 16V
2868	4822 126 14472	1μF 10% 10V 0805
2869	4822 126 14247	1.5nF 50V 0603
2870	2238 586 59812	100nF 20-80% 50V 0603
2874	2238 586 59812	100nF 20-80% 50V 0603
2879	4822 126 11669	27pF 5% 50V 0603
2880	2238 586 59812	100nF 20-80% 50V 0603
2881	2238 586 59812	100nF 20-80% 50V 0603
2882	2238 586 59812	100nF 20-80% 50V 0603

3007	4822 051 30103	10kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3016	4822 051 30101	100Ω 5% 0.062W
3018	4822 051 30101	100Ω 5% 0.062W
3019	4822 051 30103	10kΩ 5% 0.062W
3133	4822 051 30101	100Ω 5% 0.062W
3144	4822 051 30271	270Ω 5% 0.062W
3145	4822 051 30223	22kΩ 5% 0.062W
3146	4822 051 30561	560Ω 5% 0.062W
3150	4822 051 30271	270Ω 5% 0.062W
3151	4822 051 30223	22kΩ 5% 0.062W
3152	4822 051 30561	560Ω 5% 0.062W
3156	4822 051 30271	270Ω 5% 0.062W
3157	4822 051 30223	22kΩ 5% 0.062W
3158	4822 051 30561	560Ω 5% 0.062W
3162	4822 051 30101	100Ω 5% 0.062W
3164	4822 051 30471	470Ω 5% 0.062W
3166	4822 051 30101	100Ω 5% 0.062W
3170	4822 051 30101	100Ω 5% 0.062W
3171	4822 051 30101	100Ω 5% 0.062W
3172	4822 051 30101	100Ω 5% 0.062W
3200	4822 051 30101	100Ω 5% 0.062W
3203	4822 051 30101	100Ω 5% 0.062W
3204	4822 051 30101	100Ω 5% 0.062W
3205	4822 051 30101	100Ω 5% 0.062W
3206	4822 051 30102	1kΩ 5% 0.062W
3207	4822 051 30103	10kΩ 5% 0.062W
3208	4822 051 30332	3.3kΩ 5% 0.062W
3209	4822 051 30101	100Ω 5% 0.062W
3210	4822 051 30101	100Ω 5% 0.062W
3211	4822 051 30102	1kΩ 5% 0.062W
3212	4822 051 30102	1kΩ 5% 0.062W
3219	4822 117 12139	22Ω 5% 0.062W
3294	4822 051 30102	1kΩ 5% 0.062W
3295	4822 051 30103	10kΩ 5% 0.062W
3296	4822 051 30474	470kΩ 5% 0.062W
3300	4822 051 30153	15kΩ 5% 0.062W
3304	4822 051 30689	68Ω 5% 0.063W 0603
3305	4822 051 30472	4.7kΩ 5% 0.062W
3306	4822 051 30153	15kΩ 5% 0.062W
3307	4822 051 30472	4.7kΩ 5% 0.062W
3308	4822 051 30271	270Ω 5% 0.062W
3309	4822 051 30273	27kΩ 5% 0.062W
3310	4822 051 30102	1kΩ 5% 0.062W
3311	4822 051 30102	1kΩ 5% 0.062W
3312	4822 117 12903	1.8kΩ 1% 0.063W 0603
3313	4822 051 30103	10kΩ 5% 0.062W
3314	4822 117 12903	1.8kΩ 1% 0.063W 0603
3316	4822 051 30153	15kΩ 5% 0.062W
3317	4822 051 30472	4.7kΩ 5% 0.062W
3318	4822 051 30271	270Ω 5% 0.062W
3319	4822 051 30273	27kΩ 5% 0.062W
3320	4822 051 30102	1kΩ 5% 0.062W
3321	4822 051 30102	1kΩ 5% 0.062W
3322	4822 117 12903	1.8kΩ 1% 0.063W 0603
3323	4822 051 30103	10kΩ 5% 0.062W
3324	4822 117 12903	1.8kΩ 1% 0.063W 0603
3326	4822 051 30102	1kΩ 5% 0.062W
3327	4822 051 30103	10kΩ 5% 0.062W
3328	4822 051 30271	270Ω 5% 0.062W
3329	4822 051 30273	27kΩ 5% 0.062W
3330	4822 051 30102	1kΩ 5% 0.062W
3331	4822 051 30102	1kΩ 5% 0.062W
3332	4822 117 12903	1.8kΩ 1% 0.063W 0603
3333	4822 051 30103	10kΩ 5% 0.062W
3334	4822 117 12903	1.8kΩ 1% 0.063W 0603
3336	4822 051 30103	10kΩ 5% 0.062W
3337	4822 051 30103	10kΩ 5% 0.062W
3338	4822 051 30333	33kΩ 5% 0.062W
3339	4822 051 30103	10kΩ 5% 0.062W
3340	4822 051 30103	10kΩ 5% 0.062W
3344	4822 051 30472	4.7kΩ 5% 0.062W
3346	4822 051 30103	10kΩ 5% 0.062W
3348	4822 051 30474	470kΩ 5% 0.062W
3349	4822 051 30333	33kΩ 5% 0.062W
3350	4822 051 30101	100Ω 5% 0.062W
3351	4822 051 30689	68Ω 5% 0.063W 0603
3352	4822 051 30103	10kΩ 5% 0.062W
3353	4822 051 30101	100Ω 5% 0.062W
3354	4822 051 30101	100Ω 5% 0.062W
3355	4822 051 30103	10kΩ 5% 0.062W
3359	4822 051 30689	68Ω 5% 0.063W 0603
3363	4822 051 30472	4.7kΩ 5% 0.062W
3370	4822 051 30474	470kΩ 5% 0.062W
3371	4822 051 30101	100Ω 5% 0.062W
3372	4822 051 30103	10kΩ 5% 0.062W
3373	4822 051 30222	2.2kΩ 5% 0.062W
3375	4822 117 13632	100kΩ 1% 0603 0.62W
3376	4822 051 30472	4.7kΩ 5% 0.062W
3377	4822 051 30101	100Ω 5% 0.062W
3379	4822 051 30222	2.2kΩ 5% 0.062W
3380	3198 031 11010	4 x 100Ω 5% 1206
3381	3198 031 11010	4 x 100Ω 5% 1206
3382	3198 031 11010	4 x 100Ω 5% 1206
3383	3198 031 11010	4 x 100Ω 5% 1206
3384	4822 051 30101	100Ω 5% 0.062W
3385	4822 051 30102	1kΩ 5% 0.062W
3386	4822 051 30222	2.2kΩ 5% 0.062W
3387	4822 051 30102	1kΩ 5% 0.062W
3388	4822 051 30102	1kΩ 5% 0.062W
3389	4822 051 30101	100Ω 5% 0.062W
3390	4822 051 30102	1kΩ 5% 0.062W
3391	4822 051 30333	33kΩ 5% 0.062W
3392	4822 051 30101	100Ω 5% 0.062W
3393	4822 051 30102	1kΩ 5% 0.062W
3394	4822 051 30222	2.2kΩ 5% 0.062W
3398	3198 031 11010	4 x 100Ω 5% 1206
3400	4822 051 30222	2.2kΩ 5% 0.062W
3402	3198 031 11010	4 x 100Ω 5% 1206
3404	3198 031 11010	4 x 100Ω 5% 1206
3405	4822 051 30332	3.3kΩ 5% 0.062W
3406	3198 031 11010	4 x 100Ω 5% 1206
3410	4822 051 30222	2.2kΩ 5% 0.062W
3411	4822 051 30332	3.3kΩ 5% 0.062W
3413	4822 051 30222	2.2kΩ 5% 0.062W
3414	4822 051 30472	4.7kΩ 5% 0.062W
3415	4822 051 30472	4.7kΩ 5% 0.062W
3418	4822 051 30102	1kΩ 5% 0.062W
3419	4822 051 30392	3.9kΩ 5% 0.063W 0603
3420	4822 051 30222	2.2kΩ 5% 0.062W
3421	4822 051 30102	1kΩ 5% 0.062W
3422	4822 051 30152	1.5kΩ 5% 0.062W
3424	4822 051 30332	3.3kΩ 5% 0.062W
3426	4822 051 30332	3.3kΩ 5% 0.062W
3428	4822 051 30101	100Ω 5% 0.062W
3429	4822 051 30101	100Ω 5% 0.062W
3430	4822 051 30472	4.7kΩ 5% 0.062W
3431	4822 051 30101	100Ω 5% 0.062W
3432	4822 051 30472	4.7kΩ 5% 0.062W
3433	4822 051 30101	100Ω 5% 0.062W
3435	4822 051 30273	27kΩ 5% 0.062W
3436	4822 117 12891	220kΩ 1% 0.063W 0603
3448	3198 031 11010	4 x 100Ω 5% 1206
3449	3198 031 11010	4 x 100Ω 5% 1206
3450	4822 051 30101	100Ω 5% 0.062W
3451	3198 031 11010	4 x 100Ω 5% 1206
3452	3198 031 11010	4 x 100Ω 5% 1206
3453	3198 031 11010	4 x 100Ω 5% 1206
3460	3198 031 11010	4 x 100Ω 5% 1206
3461	3198 031 11010	4 x 100Ω 5% 1206
3462	3198 031 11010	4 x 100Ω 5% 1206
3463	3198 031 11010	4 x 100Ω 5% 1206
3464	3198 031 11010	4 x 100Ω 5% 1206
3483	4822 051 30471	470Ω 5% 0.062W
3485	4822 051 30151	150Ω 5% 0.062W
3486	4822 051 30151	150Ω 5% 0.062W
3487	4822 051 30151	150Ω 5% 0.062W
3488	4822 051 30222	2.2kΩ 5% 0.062W
3489	4822 051 30222	2.2kΩ 5% 0.062W
3490	4822 051 30102	1kΩ 5% 0.062W
3494	3198 031 14710	4 x 470Ω 5% 1206
3496	4822 051 30103	10kΩ 5% 0.062W
3502	4822 051 30008	Jumper 0603
3506	4822 051 30332	3.3kΩ 5% 0.062W
3507	4822 051 30472	4.7kΩ 5% 0.062W
3510	4822 051 30102	1kΩ 5% 0.062W
3511	4822 051 30222	2.2kΩ 5% 0.062W
3512	4822 051 30562	5.6kΩ 5% 0.063W 0603
3513	4822 051 30332	3.3kΩ 5% 0.062W
3514	4822 051 30472	4.7kΩ 5% 0.062W
3515	4822 117 12925	47kΩ 1% 0.063W 0603
3516	4822 117 12925	47kΩ 1% 0.063W 0603
3517	4822 051 30102	1kΩ 5% 0.062W
3518	4822 117 13632	100kΩ 1% 0603 0.62W
3519	4822 051 30222	2.2kΩ 5% 0.062W
3520	4822 051 30222	2.2kΩ 5% 0.062W
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532	4822 051 30101	100Ω 5% 0.062W
3536	5322 117 13037	2.2kΩ 0.063W 0603
3540	4822 051 30101	100Ω 5% 0.062W
3541	4822 051 30101	100Ω 5% 0.062W
3545	4822 051 30008	Jumper 0603
3547	4822 051 30102	1kΩ 5% 0.062W
3548	4822 051 30102	1kΩ 5% 0.062W
3550	4822 051 30101	100Ω 5% 0.062W
3551	4822 051 30101	100Ω 5% 0.062W
3552	4822 051 30101	100Ω 5% 0.062W
3553	4822 051 30101	100Ω 5% 0.062W
3556	4822 051 30222	2.2kΩ 5% 0.062W
3557	4822 051 30101	100Ω 5% 0.062W
3558	4822 051 30101	100Ω 5% 0.062W
3559	4822 051 30101	100Ω 5% 0.062W
3560	4822 051 30101	100Ω 5% 0.062W
3562	4822 051 30103	10kΩ 5% 0.062W
3566	4822 051 30103	10kΩ 5% 0.062W
3567	4822 051 30103	10kΩ 5% 0.062W
3568	4822 051 30008	Jumper 0603
3570	4822 051 30332	3.3kΩ 5% 0.062W
3571	4822 051 30101	100Ω 5% 0.062W
3572	4822 051 30008	Jumper 0603
3575	4822 051 30102	1kΩ 5% 0.062W
3578	4822 051 30151	150Ω 5% 0.062W
3580	4822 051 30472	4.7kΩ 5% 0.062W
3581	4822 051 30101	100Ω 5% 0.062W
3582	4822 051 30101	100Ω 5% 0.062W
3583	4822 051 30472	4.7kΩ 5% 0.062W
3590	4822 051 30332	3.3kΩ 5% 0.062W
3591	4822 051 30332	3.3kΩ 5% 0.062W
3592	4822 051 30332	3.3kΩ 5% 0.062W
3593	4822 051 30332	3.3kΩ 5% 0.062W
3594	4822 051 30472	4.7kΩ 5% 0.062W
3600	4822 051 30332	3.3kΩ 5% 0.062W
3601	4822 051 30332	3.3kΩ 5% 0.062W
3602	4822 051 30101	100Ω 5% 0.062W
3603	4822 051 30101	100Ω 5% 0.062W
3604	4822 051 30101	100Ω 5% 0.062W
3605	4822 051 30101	100Ω 5% 0.062W
3606	4822 051 30101	100Ω 5% 0.062W
3607	4822 051 30101	100Ω 5% 0.062W
3608	4822 051 30101	100Ω 5% 0.062W
3609	4822 051 30101	100Ω 5% 0.062W
3610	4822 051 30479	47Ω 5% 0.062W
3611	4822 051 30101	100Ω 5% 0.062W
3615	4822 051 30101	100Ω 5% 0.062W
3620	4822 051 30103	10kΩ 5% 0.062W
3621	4822 051 30103	10kΩ 5% 0.062W
3622	4822 051 30479	47Ω 5% 0.062W
3623	4822 051 30102	1kΩ 5% 0.062W
3625	4822 051 30332	3.3kΩ 5% 0.062W
3626	4822 051 30332	3.3kΩ 5% 0.062W
3627	4822 051 30332	3.3kΩ 5% 0.062W
3628	4822 051 30101	100Ω 5% 0.062W
3630	4822 051 30102	1kΩ 5% 0.062W
3632	4822 051 30332	3.3kΩ 5% 0.062W
3633	4822 051 30472	4.7kΩ 5% 0.062W
3634	4822 051 30332	3.3kΩ 5% 0.062W
3636	4822 051 30332	3.3kΩ 5% 0.062W
3638	4822 051 30102	1kΩ 5% 0.062W
3640	4822 051 30222	2.2kΩ 5% 0.062W
3641	4822 051 30101	100Ω 5% 0.062W
3653	4822 051 30102	1kΩ 5% 0.062W
3654	4822 051 30102	1kΩ 5% 0.062W
3655	4822 051 30102	1kΩ 5% 0.062W
3657	4822 051 30103	10kΩ 5% 0.062W
3658	4822 051 30103	10kΩ 5% 0.062W
3661	4822 051 30101	100Ω 5% 0.062W
3662	4822 051 30101	100Ω 5% 0.062W
3663	4822 051 30101	100Ω 5% 0.062W
3664	4822 051 30101	100Ω 5% 0.062W
3665	4822 051 30101	100Ω 5% 0.062W
3667	4822 051 30101	100Ω 5% 0.062W
3668	4822 051 30101	100Ω 5% 0.062W
3673	4822 051 30103	10kΩ 5% 0.062W
3674	4822 051 30101	100Ω 5% 0.062W
3675	4822 051 30103	10kΩ 5% 0.062W
3676	4822 051 30101	100Ω 5% 0.062W
3677	4822 051 30101	100Ω 5% 0.062W
3679	4822 051 30101	100Ω 5% 0.062W
3681	4822 051 30332	3.3kΩ 5% 0.062W
3682	4822 051 30471	470Ω 5% 0.062W
3685	4822 051 30332	3.3kΩ 5% 0.062W
3686	4822 051 30471	470Ω 5% 0.062W
3710	4822 051 30333	33kΩ 5% 0.062W
3711	4822 051 30102	1kΩ 5% 0.062W
3713	4822 051 30101	100Ω 5% 0.062W
3714	4822 051 30223	22kΩ 5% 0.062W
3716	4822 051 30153	15kΩ 5% 0.062W
3720	4822 051 30333	33kΩ 5% 0.062W
3721	4822 051 30102	1kΩ 5% 0.062W
3723	4822 051 30101	100Ω 5% 0.062W
3724	4822 051 30223	22kΩ 5% 0.062W

3726	4822 051 30153	15kΩ 5% 0.062W
3730	4822 051 30333	33kΩ 5% 0.062W
3731	4822 051 30331	330Ω 5% 0.062W
3740	4822 051 30333	33kΩ 5% 0.062W
3741	4822 051 30331	330Ω 5% 0.062W
3796	4822 051 30472	4.7kΩ 5% 0.062W
3797	4822 051 30472	4.7kΩ 5% 0.062W
3798	4822 051 30333	33kΩ 5% 0.062W
3800	4822 051 30331	330Ω 5% 0.062W
3801	4822 051 30331	330Ω 5% 0.062W
3802	4822 051 30333	33kΩ 5% 0.062W
3803	4822 117 13632	100kΩ 1% 0603 0.62W
3804	4822 051 30333	33kΩ 5% 0.062W
3805	4822 117 13632	100kΩ 1% 0603 0.62W
3806	4822 117 13632	100kΩ 1% 0603 0.62W
3807	4822 117 13632	100kΩ 1% 0603 0.62W
3808	4822 117 13632	100kΩ 1% 0603 0.62W
3809	4822 051 30333	33kΩ 5% 0.062W
3810	4822 051 30472	4.7kΩ 5% 0.062W
3811	4822 051 30472	4.7kΩ 5% 0.062W
3812	4822 051 30101	100Ω 5% 0.062W
3813	4822 051 30101	100Ω 5% 0.062W
3815	4822 051 30101	100Ω 5% 0.062W
3816	4822 051 30101	100Ω 5% 0.062W
3820	4822 051 30333	33kΩ 5% 0.062W
3821	4822 051 30103	10kΩ 5% 0.062W
3822	4822 051 30333	33kΩ 5% 0.062W
3840	4822 051 30223	22kΩ 5% 0.062W
3841	4822 051 30223	22kΩ 5% 0.062W
3843	4822 051 30393	39kΩ 5% 0.062W
3844	4822 051 30101	100Ω 5% 0.062W
3845	4822 051 30101	100Ω 5% 0.062W
3846	4822 051 30223	22kΩ 5% 0.062W
3847	4822 051 30393	39kΩ 5% 0.062W
3848	4822 051 30393	39kΩ 5% 0.062W
3849	4822 051 30101	100Ω 5% 0.062W
3850	4822 051 30223	22kΩ 5% 0.062W
3851	4822 051 30223	22kΩ 5% 0.062W
3853	4822 051 30393	39kΩ 5% 0.062W
3854	4822 051 30101	100Ω 5% 0.062W
3855	4822 051 30101	100Ω 5% 0.062W
3856	4822 051 30223	22kΩ 5% 0.062W
3857	4822 051 30393	39kΩ 5% 0.062W
3858	4822 051 30393	39kΩ 5% 0.062W
3859	4822 051 30101	100Ω 5% 0.062W
3860	4822 117 12902	8.2kΩ 1% 0.063W 0603
3861	4822 051 30223	22kΩ 5% 0.062W
3862	4822 051 30273	27kΩ 5% 0.062W
3863	4822 117 12902	8.2kΩ 1% 0.063W 0603
3864	4822 051 30223	22kΩ 5% 0.062W
3865	4822 051 30273	27kΩ 5% 0.062W
3866	4822 051 30101	100Ω 5% 0.062W
3867	4822 051 30101	100Ω 5% 0.062W
3870	4822 051 30101	100Ω 5% 0.062W
3879	4822 117 12925	47kΩ 1% 0.063W 0603
3880	4822 051 30471	470Ω 5% 0.062W
3900	4822 051 30472	4.7kΩ 5% 0.062W
3901	4822 051 30333	33kΩ 5% 0.062W
3905	4822 051 30103	10kΩ 5% 0.062W
3906	4822 051 30103	10kΩ 5% 0.062W
3907	4822 051 30103	10kΩ 5% 0.062W
3908	4822 051 30103	10kΩ 5% 0.062W
3909	4822 051 30152	1.5kΩ 5% 0.062W
3910	4822 051 30102	1kΩ 5% 0.062W
3911	4822 117 12925	47kΩ 1% 0.063W 0603
3912	4822 051 30472	4.7kΩ 5% 0.062W
3913	4822 051 30101	100Ω 5% 0.062W
3917	4822 051 30472	4.7kΩ 5% 0.062W
3918	4822 051 30102	1kΩ 5% 0.062W
3919	4822 051 30102	1kΩ 5% 0.062W
3922	4822 051 30102	1kΩ 5% 0.062W
3923	4822 051 30472	4.7kΩ 5% 0.062W
3924	4822 051 30331	330Ω 5% 0.062W
3925	4822 051 30151	150Ω 5% 0.062W
3926	4822 051 30331	330Ω 5% 0.062W
3927	4822 051 30331	330Ω 5% 0.062W
3928	4822 051 30331	330Ω 5% 0.062W
4006	4822 051 30008	Jumper 0603
4007	4822 051 30008	Jumper 0603
4009	4822 051 30008	Jumper 0603
4010	4822 051 30008	Jumper 0603
4146	4822 051 30008	Jumper 0603
4152	4822 051 30008	Jumper 0603
4158	4822 051 30008	Jumper 0603
4201	4822 051 30008	Jumper 0603
4202	4822 051 30008	Jumper 0603
4203	4822 051 30008	Jumper 0603
4315	4822 051 30008	Jumper 0603
4325	4822 051 30008	Jumper 0603
4335	4822 051 30008	Jumper 0603
4385	4822 051 30008	Jumper 0603
4431	4822 051 30008	Jumper 0603
4572	4822 051 30008	Jumper 0603
4574	4822 051 30008	Jumper 0603
4582	4822 051 30008	Jumper 0603
4605	4822 051 30008	Jumper 0603
4659	4822 051 30008	Jumper 0603
4680	4822 051 30008	Jumper 0603
4684	4822 051 30008	Jumper 0603
4794	4822 051 30008	Jumper 0603
4797	4822 051 30008	Jumper 0603
4800	4822 051 30008	Jumper 0603
4801	4822 051 30008	Jumper 0603
4810	4822 051 30008	Jumper 0603
4811	4822 051 30008	Jumper 0603
4871	4822 051 30008	Jumper 0603
4874	4822 051 30008	Jumper 0603
4875	4822 051 30008	Jumper 0603
4884	4822 051 30008	Jumper 0603
4894	4822 051 30008	Jumper 0603

5140	2422 549 43062	Bead 600Ω at 100MHz
5162	2422 549 43062	Bead 600Ω at 100MHz
5164	2422 549 43062	Bead 600Ω at 100MHz
5196	2422 549 43062	Bead 600Ω at 100MHz
5197	2422 549 43769	Bead 30Ω at 100MHz
5198	2422 549 43062	Bead 600Ω at 100MHz
5199	2422 549 43062	Bead 600Ω at 100MHz
5300	2422 549 43062	Bead 600Ω at 100MHz
5302	2422 549 43062	Bead 600Ω at 100MHz
5352	2422 549 43769	Bead 30Ω at 100MHz
5520	2422 549 43062	Bead 600Ω at 100MHz
5521	2422 549 43062	Bead 600Ω at 100MHz
5522	2422 549 43062	Bead 600Ω at 100MHz
5523	2422 549 43062	Bead 600Ω at 100MHz
5524	2422 549 43062	Bead 600Ω at 100MHz
5530	2422 549 43769	Bead 30Ω at 100MHz
5541	2422 549 43062	Bead 600Ω at 100MHz
5570	3198 018 51090	10μH 10% 0603
5572	2422 549 43769	Bead 30Ω at 100MHz
5574	2422 549 43062	Bead 600Ω at 100MHz
5628	2422 549 43062	Bead 600Ω at 100MHz
5630	2422 549 43062	Bead 600Ω at 100MHz
5642	2422 549 43062	Bead 600Ω at 100MHz
5643	2422 549 43062	Bead 600Ω at 100MHz
5644	2422 549 43062	Bead 600Ω at 100MHz
5645	2422 549 43062	Bead 600Ω at 100MHz
5646	2422 549 43062	Bead 600Ω at 100MHz
5647	2422 549 43062	Bead 600Ω at 100MHz
5648	2422 549 43062	Bead 600Ω at 100MHz
5649	2422 549 43062	Bead 600Ω at 100MHz
5670	2422 549 43062	Bead 600Ω at 100MHz
5672	2422 549 43062	Bead 600Ω at 100MHz
5673	2422 549 43062	Bead 600Ω at 100MHz
5796	2422 549 43062	Bead 600Ω at 100MHz
5810	2422 549 43062	Bead 600Ω at 100MHz
5820	2422 549 43062	Bead 600Ω at 100MHz
5822	2422 549 43769	Bead 30Ω at 100MHz
5834	2422 549 43769	Bead 30Ω at 100MHz
5870	2422 549 43769	Bead 30Ω at 100MHz

6007	9322 149 96685	BZX384-C2V4
6019	9322 149 96685	BZX384-C2V4
6166	9322 149 96685	BZX384-C2V4
6302	4822 130 10654	BAT254
6310	4822 130 10654	BAT254
6311	4822 130 10654	BAT254
6315	9340 548 71115	SM PDZ33B
6316	9340 548 71115	SM PDZ33B
6317	9340 548 71115	SM PDZ33B
6318	9340 548 71115	SM PDZ33B
6319	9340 548 71115	SM PDZ33B
6320	9340 548 71115	SM PDZ33B
6321	9340 548 71115	SM PDZ33B
6322	9340 548 71115	SM PDZ33B
6323	9340 548 71115	SM PDZ33B
6324	9340 548 71115	SM PDZ33B
6354	9340 548 71115	SM PDZ33B
6355	9340 548 71115	SM PDZ33B
6356	9340 548 71115	SM PDZ33B
6357	9340 548 71115	SM PDZ33B
6378	4822 130 83757	BAS216
6380	4822 130 10654	BAT254
6381	4822 130 10654	BAT254
6388	4822 130 11422	PLVA2650A
6393	4822 130 11422	PLVA2650A
6399	4822 130 11422	PLVA2650A
6503	9322 149 96685	BZX384-C2V4
6507	4822 130 10654	BAT254
6508	4822 130 10654	BAT254
6509	4822 130 10654	BAT254
6551	4822 130 10328	BAV99W
6552	4822 130 10328	BAV99W
6553	4822 130 10328	BAV99W
6554	4822 130 10328	BAV99W
6555	4822 130 10328	BAV99W
6630	4822 130 10654	BAT254
6710	9340 548 71115	SM PDZ33B
6711	9340 548 71115	SM PDZ33B
6720	9340 548 71115	SM PDZ33B
6721	9340 548 71115	SM PDZ33B
6730	9340 548 71115	SM PDZ33B
6731	9340 548 71115	SM PDZ33B
6740	9340 548 71115	SM PDZ33B
6741	9340 548 71115	SM PDZ33B
6802	9340 260 20115	BAW56W
6805	9340 260 20115	BAW56W
6807	9340 260 20115	BAW56W
6820	4822 130 10654	BAT254
6821	4822 130 11422	PLVA2650A

7145	3198 010 42310	BC847BW
7151	3198 010 42310	BC847BW
7157	3198 010 42310	BC847BW
7165	3198 010 42310	BC847BW
7170	9322 160 96671	AD9887KS-140
7175	4822 209 17398	LD1117DT33
7303	4822 209 30212	PC74HCT125T
7308	3198 010 42310	BC847BW
7310	3198 010 42310	BC847BW
7311	9322 145 66668	TSH93ID
7315	3198 010 42310	BC847BW
7316	3198 010 42310	BC847BW
7318	3198 010 42310	BC847BW
7320	3198 010 42310	BC847BW
7321	3198 010 42310	BC847BW
7322	3198 010 42310	BC847BW
7323	3198 010 42310	BC847BW
7325	3198 010 42310	BC847BW
7326	3198 010 42310	BC847BW
7328	3198 010 42310	BC847BW
7340	9337 153 10118	74HCT4052D
7352	9322 160 17668	ST202ECD
7370	4822 209 71585	74HCT4538N
7383	9352 684 81557	SAA5801H/015
7405	3198 010 42310	BC847BW
7406	3198 010 42310	BC847BW
7430	9322 156 81668	M24C32-WMN6TNKSA
7500	9322 157 20668	MSM51V18165F-60J
7510	9352 499 60118	74LVC00AD
7515	3198 010 42310	BC847BW
7516	3198 010 42320	BC857BW
7517	9322 158 67685	ADM810TART
7530	4822 209 90188	PCF8591T
7540	5322 209 33172	PCF8574AT
7550	5322 209 11598	PC74HCT4538T
7555	5322 209 11598	PC74HCT4538T
7563	3198 010 42310	BC847BW
7570	9322 137 99668	FS6377-01
7571	5322 209 11598	PC74HCT4538T
7574	9352 317 00118	74LVC125AD
7580	9322 156 81668	M24C32-WMN6TNKSA
7605	9322 158 73671	PW164-10R
7628	9322 164 75682	CY62126BVLL-70ZI
7640	4822 209 16406	TL431ACD
7641	9322 157 95668	STD16NE06L
7655	9322 141 53682	EPC2LC20
7670	9322 159 45668	DS90C385MTD
7675	9340 560 36235	BSH111
7676	9340 560 36235	BSH111
7714	4822 209 30095	LM833D
7801	3198 010 42310	BC847BW
7802	3198 010 42310	BC847BW
7803	3198 010 42320	BC857BW
7805	9340 547 13215	BSH103
7806	9340 547 13215	BSH103
7807	9340 547 13215	BSH103
7808	9340 547 13215	BSH103
7812	9322 167 63668	MSP3415G-QG-B8
7841	4822 209 30095	LM833D
7851	4822 209 30095	LM833D
7861	9322 173 77668	TS462CD
7870	9322 167 76668	TC74HC590AF
7874	9322 167 76668	TC74HC590AF
7879	3198 010 42310	BC847BW
7880	9322 153 66668	CY7C199-15ZC
7881	9351 869 80118	74HCT573DB
7882	9351 869 80118	74HCT573DB

VGA Connector Panel [VGA]

Various

0301	2422 025 17136	Connector 20P m
0305	2422 025 16705	Connector 12P m
0315	2422 025 16542	Connector 2P M
0318	2422 025 17183	Connector 32P f
0318	2422 025 17233	Connector 32P f
0319	2422 025 17047	Connector 13P m
0320	2422 025 16545	Connector 10P m
0371	2422 025 17027	Connector 15P F
0371	4822 267 51477	Socket 15P f
0372	2422 025 17027	Connector 15P F
0372	4822 267 51477	Socket 15P f
0374	2422 026 05276	Socket 1P f Orange
0382	2422 025 17253	Connector 10P m
0382	2422 025 17274	Connector 10P m
0385	2422 025 17253	Connector 10P m
0385	2422 025 17274	Connector 10P m
0388	2422 025 16703	Connector 7P m
0604	3122 357 00301	Software (check Prod.Surv.)
0605	3122 357 00311	Software (check Prod.Surv.)
1100	2422 086 11009	Fuse T1.A 63V 2410
1170	2422 086 11031	Fuse SMD 500mA 63V
1415	2422 543 89022	Xtal 6MHz 20pF CX5F
1570	2422 543 01115	Crystal 24.576MHz
1575	2422 086 11031	Fuse SMD 500mA 63V
1670	2422 086 11031	Fuse SMD 500mA 63V

⊣⊢

2007	4822 126 14305	100nF 10% 16V 0603
2009	4822 126 14305	100nF 10% 16V 0603
2061	4822 126 14305	100nF 10% 16V 0603
2066	4822 126 14305	100nF 10% 16V 0603
2090	4822 126 14305	100nF 10% 16V 0603
2097	3198 016 31080	1pF 25% 50V 0603
2103	3198 016 31080	1pF 25% 50V 0603
2142	4822 126 14305	100nF 10% 16V 0603
2144	5322 124 41945	22µF 20% 35V
2146	3198 017 34730	47nF 16V 0603
2147	5322 124 41945	22µF 20% 35V
2150	5322 124 41945	22µF 20% 35V
2151	3198 017 34730	47nF 16V 0603
2152	3198 017 34730	47nF 16V 0603
2153	5322 124 41945	22µF 20% 35V
2156	5322 124 41945	22µF 20% 35V
2158	3198 017 34730	47nF 16V 0603
2159	5322 124 41945	22µF 20% 35V
2164	4822 124 12095	100µF 20% 16V
2165	4822 126 14305	100nF 10% 16V 0603
2166	4822 126 14305	100nF 10% 16V 0603
2167	4822 124 12095	100µF 20% 16V
2170	4822 126 14305	100nF 10% 16V 0603
2171	4822 126 14305	100nF 10% 16V 0603
2172	4822 126 14305	100nF 10% 16V 0603
2173	4822 126 14305	100nF 10% 16V 0603
2174	4822 126 14305	100nF 10% 16V 0603
2175	4822 126 14305	100nF 10% 16V 0603
2176	4822 126 14305	100nF 10% 16V 0603
2177	4822 126 14305	100nF 10% 16V 0603
2178	4822 126 14305	100nF 10% 16V 0603
2179	4822 126 14305	100nF 10% 16V 0603
2180	4822 126 14305	100nF 10% 16V 0603
2181	4822 126 14305	100nF 10% 16V 0603
2182	4822 126 14305	100nF 10% 16V 0603
2183	4822 126 14305	100nF 10% 16V 0603
2184	4822 126 14305	100nF 10% 16V 0603
2185	4822 126 14305	100nF 10% 16V 0603
2186	4822 126 14305	100nF 10% 16V 0603
2187	4822 126 14305	100nF 10% 16V 0603
2188	4822 126 14305	100nF 10% 16V 0603
2189	4822 126 14305	100nF 10% 16V 0603
2190	4822 126 14305	100nF 10% 16V 0603
2191	4822 126 14305	100nF 10% 16V 0603
2192	4822 126 14305	100nF 10% 16V 0603
2193	4822 126 14305	100nF 10% 16V 0603
2195	4822 124 23002	10µF 20% 16V
2196	4822 124 23002	10µF 20% 16V
2197	4822 124 23002	10µF 20% 16V
2198	4822 124 23002	10µF 20% 16V
2199	4822 124 23002	10µF 20% 16V
2205	4822 126 14305	100nF 10% 16V 0603
2206	4822 126 14305	100nF 10% 16V 0603
2207	4822 126 14305	100nF 10% 16V 0603
2208	4822 126 14127	39nF 10% 50V 0805
2210	5322 126 11581	3.9nF 10% 63V 0603
2212	4822 126 14305	100nF 10% 16V 0603
2300	4822 124 12095	100µF 20% 16V
2301	4822 126 14305	100nF 10% 16V 0603
2302	4822 124 23002	10µF 20% 16V
2304	4822 126 14305	100nF 10% 16V 0603
2308	5322 124 41945	22µF 20% 35V
2310	4822 126 14305	100nF 10% 16V 0603
2311	4822 126 14305	100nF 10% 16V 0603
2318	5322 124 41945	22µF 20% 35V
2328	5322 124 41945	22µF 20% 35V
2340	4822 126 14305	100nF 10% 16V 0603
2351	4822 126 14305	100nF 10% 16V 0603
2352	4822 126 14305	100nF 10% 16V 0603
2353	4822 124 23002	10µF 20% 16V
2354	4822 126 14305	100nF 10% 16V 0603
2355	4822 126 14305	100nF 10% 16V 0603
2356	4822 126 14305	100nF 10% 16V 0603
2365	4822 126 14305	100nF 10% 16V 0603
2370	4822 126 14305	100nF 10% 16V 0603
2372	4822 126 14305	100nF 10% 16V 0603
2375	4822 126 14305	100nF 10% 16V 0603
2376	4822 126 14305	100nF 10% 16V 0603
2381	4822 126 14305	100nF 10% 16V 0603
2382	4822 126 14305	100nF 10% 16V 0603
2383	4822 126 14305	100nF 10% 16V 0603
2415	2238 867 75339	33pF 5% 50V 0603
2416	4822 126 11669	27pF 5% 50V 0603
2420	4822 126 14305	100nF 10% 16V 0603
2432	4822 126 14305	100nF 10% 16V 0603
2433	4822 126 14305	100nF 10% 16V 0603
2434	4822 126 14305	100nF 10% 16V 0603
2435	4822 126 14305	100nF 10% 16V 0603
2436	4822 126 14305	100nF 10% 16V 0603
2437	4822 126 14305	100nF 10% 16V 0603
2438	4822 126 13879	220nF 20% 16V
2439	4822 126 13879	220nF 20% 16V
2446	4822 126 14305	100nF 10% 16V 0603
2447	4822 126 14305	100nF 10% 16V 0603
2448	4822 126 14305	100nF 10% 16V 0603
2499	4822 126 14305	100nF 10% 16V 0603
2500	4822 126 14305	100nF 10% 16V 0603
2501	4822 126 14226	82pF 5% 50V 0603
2502	4822 126 14226	82pF 5% 50V 0603
2503	4822 126 14226	82pF 5% 50V 0603
2504	4822 126 14226	82pF 5% 50V 0603
2505	4822 126 14226	82pF 5% 50V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2513	4822 126 14305	100nF 10% 16V 0603
2515	4822 126 14305	100nF 10% 16V 0603
2520	4822 124 23002	10µF 20% 16V
2521	4822 124 23002	10µF 20% 16V
2522	4822 124 23002	10µF 20% 16V
2523	4822 124 23002	10µF 20% 16V
2524	4822 124 23002	10µF 20% 16V
2530	5322 124 41945	22µF 20% 35V
2531	4822 126 14305	100nF 10% 16V 0603
2533	4822 126 14305	100nF 10% 16V 0603
2534	4822 126 14305	100nF 10% 16V 0603
2535	4822 126 14305	100nF 10% 16V 0603
2537	3198 016 31020	1nF 10% 25V 0603
2538	3198 016 31020	1nF 10% 25V 0603
2541	4822 126 14305	100nF 10% 16V 0603
2545	3198 016 31020	1nF 10% 25V 0603
2546	3198 016 31020	1nF 10% 25V 0603
2547	3198 016 31020	1nF 10% 25V 0603
2548	3198 016 31020	1nF 10% 25V 0603
2550	3198 016 31020	1nF 10% 25V 0603
2551	3198 016 31020	1nF 10% 25V 0603
2552	3198 016 31020	1nF 10% 25V 0603
2553	3198 016 31020	1nF 10% 25V 0603
2557	3198 016 31020	1nF 10% 25V 0603
2558	3198 016 31020	1nF 10% 25V 0603
2559	3198 016 31020	1nF 10% 25V 0603
2560	3198 016 31020	1nF 10% 25V 0603
2562	3198 016 31020	1nF 10% 25V 0603
2563	3198 016 31020	1nF 10% 25V 0603
2564	3198 016 31020	1nF 10% 25V 0603
2565	3198 016 31020	1nF 10% 25V 0603
2566	3198 016 31020	1nF 10% 25V 0603
2570	3198 016 31020	1nF 10% 25V 0603
2572	4822 126 14305	100nF 10% 16V 0603
2573	4822 124 23002	10µF 20% 16V
2574	4822 126 14305	100nF 10% 16V 0603
2583	4822 126 14305	100nF 10% 16V 0603
2600	4822 126 14305	100nF 10% 16V 0603
2601	4822 126 14305	100nF 10% 16V 0603
2602	4822 126 14305	100nF 10% 16V 0603
2603	4822 126 14305	100nF 10% 16V 0603
2604	4822 126 14305	100nF 10% 16V 0603
2605	4822 126 14305	100nF 10% 16V 0603
2606	4822 126 14305	100nF 10% 16V 0603
2607	4822 126 14305	100nF 10% 16V 0603
2608	4822 126 14305	100nF 10% 16V 0603
2609	4822 126 14305	100nF 10% 16V 0603
2610	4822 126 14305	100nF 10% 16V 0603
2611	4822 126 14305	100nF 10% 16V 0603
2612	4822 126 14305	100nF 10% 16V 0603
2613	4822 126 14305	100nF 10% 16V 0603
2614	4822 126 14305	100nF 10% 16V 0603
2615	4822 126 14305	100nF 10% 16V 0603
2616	4822 126 14305	100nF 10% 16V 0603
2617	4822 126 14305	100nF 10% 16V 0603
2618	4822 126 14305	100nF 10% 16V 0603
2619	4822 126 14305	100nF 10% 16V 0603
2620	4822 126 14305	100nF 10% 16V 0603
2621	4822 126 14305	100nF 10% 16V 0603
2622	4822 126 14305	100nF 10% 16V 0603
2623	4822 126 14305	100nF 10% 16V 0603
2624	4822 126 14305	100nF 10% 16V 0603
2625	4822 126 14305	100nF 10% 16V 0603
2628	4822 126 14305	100nF 10% 16V 0603
2629	4822 122 33741	10pF 10% 50V
2630	4822 126 14305	100nF 10% 16V 0603
2640	4822 126 14305	100nF 10% 16V 0603
2641	3198 016 31020	1nF 10% 25V 0603
2642	4822 124 23002	10µF 20% 16V
2643	4822 124 23002	10µF 20% 16V
2644	4822 124 23002	10µF 20% 16V
2645	4822 124 23002	10µF 20% 16V
2646	4822 124 23002	10µF 20% 16V
2647	4822 124 23002	10µF 20% 16V
2648	4822 124 23002	10µF 20% 16V
2649	4822 124 23002	10µF 20% 16V
2655	4822 126 14305	100nF 10% 16V 0603
2656	4822 126 14305	100nF 10% 16V 0603
2657	4822 126 14305	100nF 10% 16V 0603
2658	4822 126 14305	100nF 10% 16V 0603
2659	4822 126 14305	100nF 10% 16V 0603
2660	4822 126 14305	100nF 10% 16V 0603
2661	4822 126 14305	100nF 10% 16V 0603
2662	4822 126 14305	100nF 10% 16V 0603
2663	4822 126 14305	100nF 10% 16V 0603
2670	4822 126 14305	100nF 10% 16V 0603
2671	4822 126 14305	100nF 10% 16V 0603
2672	4822 126 14305	100nF 10% 16V 0603
2673	4822 126 14305	100nF 10% 16V 0603
2694	3198 016 31080	1pF 25% 50V 0603
2695	3198 016 31080	1pF 25% 50V 0603
2696	3198 016 31080	1pF 25% 50V 0603
2697	3198 016 31080	1pF 25% 50V 0603
2698	3198 016 31080	1pF 25% 50V 0603
2699	3198 016 31080	1pF 25% 50V 0603
2711	4822 122 31765	100pF 2% 63V
2712	4822 126 14472	1µF 10% 10V 0805
2715	4822 126 14305	100nF 10% 16V 0603
2716	4822 122 33777	47pF 5% 63V
2717	4822 126 14472	1µF 10% 10V 0805
2721	4822 122 31765	100pF 2% 63V
2722	4822 126 14472	1µF 10% 10V 0805
2726	4822 122 33777	47pF 5% 63V
2727	4822 126 14472	1µF 10% 10V 0805
2731	4822 122 31765	100pF 2% 63V
2741	4822 122 31765	100pF 2% 63V
2799	5322 124 41945	22µF 20% 35V
2800	4822 124 12095	100µF 20% 16V
2802	4822 124 23002	10µF 20% 16V
2803	4822 124 23002	10µF 20% 16V
2804	3198 016 31020	1nF 10% 25V 0603
2810	4822 124 12095	100µF 20% 16V
2811	3198 016 31020	1nF 10% 25V 0603
2812	3198 016 31020	1nF 10% 25V 0603
2813	3198 016 31020	1nF 10% 25V 0603
2814	4822 126 14585	100nF 10% 50V
2815	3198 016 31020	1nF 10% 25V 0603
2816	4822 124 23002	10µF 20% 16V
2817	4822 126 14305	100nF 10% 16V 0603
2818	3198 016 31020	1nF 10% 25V 0603
2819	3198 016 31020	1nF 10% 25V 0603
2820	4822 124 23002	10µF 20% 16V
2821	4822 124 23002	10µF 20% 16V
2822	4822 126 14247	1.5nF 50V 0603
2823	4822 124 23002	10µF 20% 16V
2824	4822 126 14247	1.5nF 50V 0603
2825	3198 016 31020	1nF 10% 25V 0603
2826	4822 126 14472	1µF 10% 10V 0805
2827	4822 126 14472	1µF 10% 10V 0805
2828	3198 016 31020	1nF 10% 25V 0603
2829	4822 124 23002	10µF 20% 16V
2830	4822 126 14305	100nF 10% 16V 0603
2833	4822 126 14247	1.5nF 50V 0603
2834	4822 124 23002	10µF 20% 16V
2837	4822 126 13881	470pF 5% 50V
2838	4822 126 13881	470pF 5% 50V
2839	4822 126 13881	470pF 5% 50V
2840	4822 126 11669	27pF 5% 50V 0603
2842	4822 126 14305	100nF 10% 16V 0603
2843	4822 126 11669	27pF 5% 50V 0603
2844	3198 016 31020	1nF 10% 25V 0603

2845	4822 126 13883	220pF 5% 50V
2848	4822 126 11669	27pF 5% 50V 0603
2849	3198 016 31020	1nF 10% 25V 0603
2850	4822 126 11669	27pF 5% 50V 0603
2852	4822 126 14305	100nF 10% 16V 0603
2853	4822 126 11669	27pF 5% 50V 0603
2854	3198 016 31020	1nF 10% 25V 0603
2857	3198 016 31020	1nF 10% 25V 0603
2858	4822 126 11669	27pF 5% 50V 0603
2861	4822 126 14305	100nF 10% 16V 0603
2862	4822 122 33777	47pF 5% 63V
2863	4822 126 14472	1µF 10% 10V 0805
2865	4822 122 33777	47pF 5% 63V
2867	3198 016 31020	1nF 10% 25V 0603
2868	4822 126 14472	1µF 10% 10V 0805
2870	4822 126 14305	100nF 10% 16V 0603
2874	4822 126 14305	100nF 10% 16V 0603
2879	4822 126 11669	27pF 5% 50V 0603
2880	4822 126 14305	100nF 10% 16V 0603
2881	4822 126 14305	100nF 10% 16V 0603
2882	4822 126 14305	100nF 10% 16V 0603
2901	2238 586 59812	100nF 20-80% 50V 0603
2901	4822 126 14305	100nF 10% 16V 0603
2902	2238 586 59812	100nF 20-80% 50V 0603
2902	4822 126 14305	100nF 10% 16V 0603
2909	2238 586 59812	100nF 20-80% 50V 0603
2909	4822 126 14305	100nF 10% 16V 0603
2910	2238 586 59812	100nF 20-80% 50V 0603
2910	4822 126 14305	100nF 10% 16V 0603
2925	2020 552 94427	100pF 5% 50v 0603

3060	4822 051 30103	10kΩ 5% 0.062W
3061	4822 051 30472	4.7kΩ 5% 0.062W
3065	4822 051 30103	10kΩ 5% 0.062W
3066	4822 051 30472	4.7kΩ 5% 0.062W
3144	4822 051 30271	270Ω 5% 0.062W
3145	4822 051 30223	22kΩ 5% 0.062W
3146	4822 051 30561	560Ω 5% 0.062W
3147	4822 051 30271	270Ω 5% 0.062W
3148	4822 051 30223	22kΩ 5% 0.062W
3149	4822 051 30561	560Ω 5% 0.062W
3150	4822 051 30271	270Ω 5% 0.062W
3151	4822 051 30223	22kΩ 5% 0.062W
3152	4822 051 30561	560Ω 5% 0.062W
3153	4822 051 30271	270Ω 5% 0.062W
3154	4822 051 30223	22kΩ 5% 0.062W
3155	4822 051 30561	560Ω 5% 0.062W
3156	4822 051 30271	270Ω 5% 0.062W
3157	4822 051 30223	22kΩ 5% 0.062W
3158	4822 051 30561	560Ω 5% 0.062W
3159	4822 051 30271	270Ω 5% 0.062W
3160	4822 051 30223	22kΩ 5% 0.062W
3161	4822 051 30561	560Ω 5% 0.062W
3164	4822 051 30471	470Ω 5% 0.062W
3200	4822 051 30101	100Ω 5% 0.062W
3201	4822 051 30008	Jumper 0603
3203	4822 051 30101	100Ω 5% 0.062W
3204	4822 051 30101	100Ω 5% 0.062W
3205	4822 051 30101	100Ω 5% 0.062W
3206	4822 051 30102	1kΩ 5% 0.062W
3207	4822 051 30103	10kΩ 5% 0.062W
3208	4822 051 30332	3.3kΩ 5% 0.062W
3209	4822 051 30101	100Ω 5% 0.062W
3210	4822 051 30101	100Ω 5% 0.062W
3211	4822 051 30102	1kΩ 5% 0.062W
3212	4822 051 30102	1kΩ 5% 0.062W
3294	4822 051 30333	33kΩ 5% 0.062W
3295	4822 051 30102	1kΩ 5% 0.062W
3296	4822 051 30474	470kΩ 5% 0.062W
3300	4822 051 30153	15kΩ 5% 0.062W
3304	4822 051 30689	68Ω 5% 0.063W 0603
3305	4822 051 30472	4.7kΩ 5% 0.062W
3306	4822 051 30153	15kΩ 5% 0.062W
3307	4822 051 30472	4.7kΩ 5% 0.062W
3308	4822 051 30271	270Ω 5% 0.062W
3309	4822 051 30273	27kΩ 5% 0.062W
3310	4822 051 30102	1kΩ 5% 0.062W
3311	4822 051 30102	1kΩ 5% 0.062W
3312	4822 117 12903	1.8kΩ 1% 0.063W 0603
3313	4822 051 30103	10kΩ 5% 0.062W
3314	4822 117 12903	1.8kΩ 1% 0.063W 0603
3316	4822 051 30153	15kΩ 5% 0.062W
3317	4822 051 30472	4.7kΩ 5% 0.062W
3318	4822 051 30271	270Ω 5% 0.062W
3319	4822 051 30273	27kΩ 5% 0.062W
3320	4822 051 30102	1kΩ 5% 0.062W
3321	4822 051 30102	1kΩ 5% 0.062W
3322	4822 117 12903	1.8kΩ 1% 0.063W 0603
3323	4822 051 30103	10kΩ 5% 0.062W
3324	4822 117 12903	1.8kΩ 1% 0.063W 0603
3326	4822 051 30333	33kΩ 5% 0.062W
3327	4822 051 30102	1kΩ 5% 0.062W
3328	4822 051 30271	270Ω 5% 0.062W
3329	4822 051 30273	27kΩ 5% 0.062W
3330	4822 051 30102	1kΩ 5% 0.062W
3331	4822 051 30102	1kΩ 5% 0.062W
3332	4822 117 12903	1.8kΩ 1% 0.063W 0603
3333	4822 051 30103	10kΩ 5% 0.062W
3334	4822 117 12903	1.8kΩ 1% 0.063W 0603
3336	4822 051 30103	10kΩ 5% 0.062W
3337	4822 051 30103	10kΩ 5% 0.062W
3338	4822 051 30333	33kΩ 5% 0.062W
3339	4822 051 30103	10kΩ 5% 0.062W
3340	4822 051 30103	10kΩ 5% 0.062W
3341	4822 051 30333	33kΩ 5% 0.062W
3342	4822 051 30102	1kΩ 5% 0.062W
3343	4822 051 30333	33kΩ 5% 0.062W
3344	4822 051 30472	4.7kΩ 5% 0.062W
3345	4822 051 30101	100Ω 5% 0.062W
3346	4822 051 30103	10kΩ 5% 0.062W
3347	4822 051 30101	100Ω 5% 0.062W
3348	4822 117 13632	100kΩ 1% 0603 0.62W
3349	4822 051 30103	10kΩ 5% 0.062W
3350	4822 051 30101	100Ω 5% 0.062W
3351	4822 051 30689	68Ω 5% 0.063W 0603
3352	4822 051 30103	10kΩ 5% 0.062W
3353	4822 051 30101	100Ω 5% 0.062W
3354	4822 051 30101	100Ω 5% 0.062W
3355	4822 051 30103	10kΩ 5% 0.062W
3359	4822 051 30689	68Ω 5% 0.063W 0603
3360	4822 051 30103	10kΩ 5% 0.062W
3361	4822 051 30472	4.7kΩ 5% 0.062W
3362	4822 051 30103	10kΩ 5% 0.062W
3363	4822 051 30472	4.7kΩ 5% 0.062W
3364	4822 051 30103	10kΩ 5% 0.062W
3365	4822 051 30474	470kΩ 5% 0.062W
3366	4822 117 12925	47kΩ 1% 0.063W 0603
3370	4822 051 30682	6.8kΩ 5% 0.062W
3371	4822 051 30101	100Ω 5% 0.062W
3372	4822 051 30103	10kΩ 5% 0.062W
3373	4822 051 30222	2.2kΩ 5% 0.062W
3374	4822 051 30102	1kΩ 5% 0.062W
3375	4822 117 13632	100kΩ 1% 0603 0.62W
3376	4822 051 30472	4.7kΩ 5% 0.062W
3377	4822 051 30101	100Ω 5% 0.062W
3378	4822 051 30102	1kΩ 5% 0.062W
3379	4822 051 30222	2.2kΩ 5% 0.062W
3380	3198 031 11010	4 x 100Ω 5% 1206
3381	3198 031 11010	4 x 100Ω 5% 1206
3382	3198 031 11010	4 x 100Ω 5% 1206
3383	3198 031 11010	4 x 100Ω 5% 1206
3384	4822 051 30101	100Ω 5% 0.062W
3385	4822 051 30102	1kΩ 5% 0.062W
3386	4822 051 30222	2.2kΩ 5% 0.062W
3388	4822 051 30102	1kΩ 5% 0.062W
3390	4822 051 30102	1kΩ 5% 0.062W
3391	4822 051 30333	33kΩ 5% 0.062W
3392	4822 051 30101	100Ω 5% 0.062W
3393	4822 051 30102	1kΩ 5% 0.062W
3394	3198 031 11010	4 x 100Ω 5% 1206
3398	3198 031 11010	4 x 100Ω 5% 1206
3400	4822 051 30102	1kΩ 5% 0.062W
3402	3198 031 11010	4 x 100Ω 5% 1206
3404	3198 031 11010	4 x 100Ω 5% 1206
3406	3198 031 11010	4 x 100Ω 5% 1206
3410	4822 051 30222	2.2kΩ 5% 0.062W
3411	4822 051 30332	3.3kΩ 5% 0.062W
3413	4822 051 30222	2.2kΩ 5% 0.062W
3414	4822 051 30222	2.2kΩ 5% 0.062W
3415	4822 051 30222	2.2kΩ 5% 0.062W
3417	4822 051 30221	220Ω 5% 0.062W
3418	4822 051 30102	1kΩ 5% 0.062W
3419	4822 051 30392	3.9kΩ 5% 0.063W 0603
3420	4822 051 30222	2.2kΩ 5% 0.062W
3421	4822 051 30102	1kΩ 5% 0.062W
3422	4822 051 30152	1.5kΩ 5% 0.062W
3423	4822 117 12925	47kΩ 1% 0.063W 0603
3424	4822 051 30332	3.3kΩ 5% 0.062W
3426	4822 051 30332	3.3kΩ 5% 0.062W
3428	4822 051 30101	100Ω 5% 0.062W
3429	4822 051 30101	100Ω 5% 0.062W
3430	4822 051 30472	4.7kΩ 5% 0.062W
3431	4822 051 30101	100Ω 5% 0.062W
3432	4822 051 30472	4.7kΩ 5% 0.062W
3433	4822 051 30101	100Ω 5% 0.062W
3435	4822 051 30273	27kΩ 5% 0.062W
3436	4822 117 12891	220kΩ 1% 0.063W 0603
3448	3198 031 11010	4 x 100Ω 5% 1206
3449	3198 031 11010	4 x 100Ω 5% 1206
3450	4822 051 30101	100Ω 5% 0.062W
3451	3198 031 11010	4 x 100Ω 5% 1206
3452	3198 031 11010	4 x 100Ω 5% 1206
3453	3198 031 11010	4 x 100Ω 5% 1206
3460	3198 031 11010	4 x 100Ω 5% 1206
3461	3198 031 11010	4 x 100Ω 5% 1206
3462	3198 031 11010	4 x 100Ω 5% 1206
3463	3198 031 11010	4 x 100Ω 5% 1206
3464	3198 031 11010	4 x 100Ω 5% 1206
3483	4822 051 30471	470Ω 5% 0.062W
3485	4822 051 30222	2.2kΩ 5% 0.062W
3486	4822 051 30222	2.2kΩ 5% 0.062W
3487	4822 051 30222	2.2kΩ 5% 0.062W
3488	4822 051 30222	2.2kΩ 5% 0.062W
3489	4822 051 30222	2.2kΩ 5% 0.062W
3490	4822 051 30102	1kΩ 5% 0.062W
3494	3198 031 14710	4 x 470Ω 5% 1206
3506	4822 051 30332	3.3kΩ 5% 0.062W
3507	4822 051 30472	4.7kΩ 5% 0.062W
3510	4822 051 30102	1kΩ 5% 0.062W
3511	4822 051 30222	2.2kΩ 5% 0.062W
3512	4822 051 30562	5.6kΩ 5% 0.063W 0603
3513	4822 051 30332	3.3kΩ 5% 0.062W
3514	4822 051 30472	4.7kΩ 5% 0.062W
3515	4822 117 12925	47kΩ 1% 0.063W 0603
3516	4822 117 12925	47kΩ 1% 0.063W 0603
3517	4822 051 30102	1kΩ 5% 0.062W
3518	4822 117 13632	100kΩ 1% 0603 0.62W
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532	4822 051 30101	100Ω 5% 0.062W
3533	4822 051 30103	10kΩ 5% 0.062W
3534	4822 051 30103	10kΩ 5% 0.062W
3535	4822 051 30103	10kΩ 5% 0.062W
3536	4822 051 30103	10kΩ 5% 0.062W
3537	4822 051 30103	10kΩ 5% 0.062W
3538	4822 051 30103	10kΩ 5% 0.062W
3539	4822 051 30103	10kΩ 5% 0.062W
3540	4822 051 30101	100Ω 5% 0.062W
3541	4822 051 30101	100Ω 5% 0.062W
3545	4822 051 30221	220Ω 5% 0.062W
3547	4822 051 30102	1kΩ 5% 0.062W
3548	4822 051 30102	1kΩ 5% 0.062W
3550	4822 051 30101	100Ω 5% 0.062W
3551	4822 051 30101	100Ω 5% 0.062W
3552	4822 051 30101	100Ω 5% 0.062W
3553	4822 051 30101	100Ω 5% 0.062W
3554	4822 051 30103	10kΩ 5% 0.062W
3557	4822 051 30101	100Ω 5% 0.062W
3558	4822 051 30101	100Ω 5% 0.062W
3559	4822 051 30101	100Ω 5% 0.062W
3560	4822 051 30101	100Ω 5% 0.062W
3562	4822 051 30103	10kΩ 5% 0.062W
3570	4822 051 30101	100Ω 5% 0.062W
3571	4822 051 30101	100Ω 5% 0.062W
3575	4822 051 30102	1kΩ 5% 0.062W
3580	4822 051 30472	4.7kΩ 5% 0.062W
3581	4822 051 30101	100Ω 5% 0.062W
3582	4822 051 30101	100Ω 5% 0.062W
3583	4822 051 30472	4.7kΩ 5% 0.062W
3590	4822 051 30332	3.3kΩ 5% 0.062W
3591	4822 051 30332	3.3kΩ 5% 0.062W
3592	4822 051 30332	3.3kΩ 5% 0.062W
3593	4822 051 30332	3.3kΩ 5% 0.062W
3600	4822 051 30332	3.3kΩ 5% 0.062W
3601	4822 051 30332	3.3kΩ 5% 0.062W
3602	4822 051 30101	100Ω 5% 0.062W
3603	4822 051 30101	100Ω 5% 0.062W
3604	4822 051 30101	100Ω 5% 0.062W
3605	4822 051 30101	100Ω 5% 0.062W
3606	4822 051 30101	100Ω 5% 0.062W
3607	4822 051 30101	100Ω 5% 0.062W
3608	4822 051 30101	100Ω 5% 0.062W
3609	4822 051 30101	100Ω 5% 0.062W
3610	4822 051 30479	47Ω 5% 0.062W
3615	4822 051 30101	100Ω 5% 0.062W
3620	4822 051 30103	10kΩ 5% 0.062W
3621	4822 051 30103	10kΩ 5% 0.062W
3622	4822 051 30479	47Ω 5% 0.062W
3623	4822 051 30102	1kΩ 5% 0.062W
3628	4822 051 30101	100Ω 5% 0.062W
3630	4822 051 30102	1kΩ 5% 0.062W
3631	4822 051 30102	1kΩ 5% 0.062W
3632	4822 051 30332	3.3kΩ 5% 0.062W
3633	4822 051 30472	4.7kΩ 5% 0.062W
3634	4822 051 30332	3.3kΩ 5% 0.062W
3635	4822 051 30103	10kΩ 5% 0.062W
3636	4822 051 30332	3.3kΩ 5% 0.062W
3640	4822 051 30222	2.2kΩ 5% 0.062W
3641	4822 051 30102	1kΩ 5% 0.062W
3653	4822 051 30102	1kΩ 5% 0.062W
3654	4822 051 30102	1kΩ 5% 0.062W
3655	4822 051 30102	1kΩ 5% 0.062W
3657	4822 051 30103	10kΩ 5% 0.062W
3658	4822 051 30103	10kΩ 5% 0.062W
3660	4822 051 30101	100Ω 5% 0.062W
3661	4822 051 30101	100Ω 5% 0.062W
3662	4822 051 30101	100Ω 5% 0.062W
3663	4822 051 30101	100Ω 5% 0.062W
3664	4822 051 30101	100Ω 5% 0.062W

3670	4822 051 30222	2.2kΩ 5% 0.062W
3673	4822 051 30103	10kΩ 5% 0.062W
3674	4822 051 30101	100Ω 5% 0.062W
3675	4822 051 30103	10kΩ 5% 0.062W
3676	4822 051 30101	100Ω 5% 0.062W
3677	4822 051 30101	100Ω 5% 0.062W
3678	4822 051 30102	1kΩ 5% 0.062W
3679	4822 051 30101	100Ω 5% 0.062W
3680	4822 051 30101	100Ω 5% 0.062W
3681	4822 051 30222	2.2kΩ 5% 0.062W
3682	4822 051 30471	470Ω 5% 0.062W
3684	4822 051 30101	100Ω 5% 0.062W
3685	4822 051 30222	2.2kΩ 5% 0.062W
3686	4822 051 30471	470Ω 5% 0.062W
3710	4822 051 30333	33kΩ 5% 0.062W
3711	4822 051 30102	1kΩ 5% 0.062W
3713	4822 051 30101	100Ω 5% 0.062W
3714	4822 051 30223	22kΩ 5% 0.062W
3716	4822 051 30153	15kΩ 5% 0.062W
3720	4822 051 30333	33kΩ 5% 0.062W
3721	4822 051 30102	1kΩ 5% 0.062W
3723	4822 051 30101	100Ω 5% 0.062W
3724	4822 051 30223	22kΩ 5% 0.062W
3726	4822 051 30153	15kΩ 5% 0.062W
3730	4822 051 30333	33kΩ 5% 0.062W
3731	4822 051 30331	330Ω 5% 0.062W
3740	4822 051 30333	33kΩ 5% 0.062W
3741	4822 051 30331	330Ω 5% 0.062W
3796	4822 051 30472	4.7kΩ 5% 0.062W
3797	4822 051 30472	4.7kΩ 5% 0.062W
3798	4822 051 30333	33kΩ 5% 0.062W
3800	4822 051 30331	330Ω 5% 0.062W
3801	4822 051 30331	330Ω 5% 0.062W
3802	4822 051 30333	33kΩ 5% 0.062W
3803	4822 117 13632	100kΩ 1% 0603 0.62W
3804	4822 051 30333	33kΩ 5% 0.062W
3805	4822 117 13632	100kΩ 1% 0603 0.62W
3806	4822 117 13632	100kΩ 1% 0603 0.62W
3807	4822 117 13632	100kΩ 1% 0603 0.62W
3808	4822 117 13632	100kΩ 1% 0603 0.62W
3810	4822 051 30472	4.7kΩ 5% 0.062W
3811	4822 051 30472	4.7kΩ 5% 0.062W
3812	4822 051 30101	100Ω 5% 0.062W
3813	4822 051 30101	100Ω 5% 0.062W
3814	4822 051 30333	33kΩ 5% 0.062W
3815	4822 051 30101	100Ω 5% 0.062W
3816	4822 051 30101	100Ω 5% 0.062W
3820	4822 051 30333	33kΩ 5% 0.062W
3821	4822 051 30103	10kΩ 5% 0.062W
3822	4822 051 30333	33kΩ 5% 0.062W
3840	4822 051 30223	22kΩ 5% 0.062W
3841	4822 051 30223	22kΩ 5% 0.062W
3843	4822 051 30393	39kΩ 5% 0.062W
3844	4822 051 30101	100Ω 5% 0.062W
3845	4822 051 30101	100Ω 5% 0.062W
3846	4822 051 30223	22kΩ 5% 0.062W
3847	4822 051 30393	39kΩ 5% 0.062W
3848	4822 051 30393	39kΩ 5% 0.062W
3849	4822 051 30101	100Ω 5% 0.062W
3850	4822 051 30223	22kΩ 5% 0.062W
3851	4822 051 30223	22kΩ 5% 0.062W
3853	4822 051 30393	39kΩ 5% 0.062W
3854	4822 051 30101	100Ω 5% 0.062W
3855	4822 051 30101	100Ω 5% 0.062W
3856	4822 051 30223	22kΩ 5% 0.062W
3857	4822 051 30393	39kΩ 5% 0.062W
3858	4822 051 30393	39kΩ 5% 0.062W
3859	4822 051 30101	100Ω 5% 0.062W
3860	4822 051 30332	3.3kΩ 5% 0.062W
3861	4822 051 30223	22kΩ 5% 0.062W
3862	4822 051 30273	27kΩ 5% 0.062W
3863	4822 051 30332	3.3kΩ 5% 0.062W
3864	4822 051 30223	22kΩ 5% 0.062W
3865	4822 051 30273	27kΩ 5% 0.062W
3866	4822 051 30101	100Ω 5% 0.062W
3867	4822 051 30101	100Ω 5% 0.062W
3870	4822 051 30101	100Ω 5% 0.062W
3879	4822 117 12925	47kΩ 1% 0.063W 0603
3880	4822 051 30471	470Ω 5% 0.062W
3900	4822 051 30331	330Ω 5% 0.062W
3900	4822 051 30472	4.7kΩ 5% 0.062W
3900	4822 051 30759	75Ω 5% 0.062W
3901	4822 051 30331	330Ω 5% 0.062W
3901	4822 051 30333	33kΩ 5% 0.062W
3901	4822 051 30759	75Ω 5% 0.062W
3902	4822 051 30331	330Ω 5% 0.062W
3902	4822 051 30759	75Ω 5% 0.062W
3903	4822 051 30101	100Ω 5% 0.062W
3904	4822 051 30103	10kΩ 5% 0.062W
3905	4822 051 30103	10kΩ 5% 0.062W
3906	4822 051 30101	100Ω 5% 0.062W
3906	4822 051 30103	10kΩ 5% 0.062W
3907	4822 051 30101	100Ω 5% 0.062W
3907	4822 051 30103	10kΩ 5% 0.062W
3908	4822 051 30101	100Ω 5% 0.062W
3908	4822 051 30103	10kΩ 5% 0.062W
3909	4822 051 30101	100Ω 5% 0.062W
3910	4822 051 30102	1kΩ 5% 0.062W
3910	4822 051 30103	10kΩ 5% 0.062W
3911	4822 051 30101	100Ω 5% 0.062W
3911	4822 117 12925	47kΩ 1% 0.063W 0603
3912	4822 051 30102	1kΩ 5% 0.062W
3912	4822 051 30472	4.7kΩ 5% 0.062W
3913	4822 051 30101	100Ω 5% 0.062W
3914	4822 051 30102	1kΩ 5% 0.062W
3915	4822 051 30101	100Ω 5% 0.062W
3916	4822 051 30101	100Ω 5% 0.062W
3917	4822 051 30103	10kΩ 5% 0.062W
3918	4822 051 30103	10kΩ 5% 0.062W
3919	4822 051 30101	100Ω 5% 0.062W
3920	4822 051 30101	100Ω 5% 0.062W
3921	4822 051 30103	10kΩ 5% 0.062W
3922	4822 051 30101	100Ω 5% 0.062W
3923	4822 051 30102	1kΩ 5% 0.062W
3924	4822 051 30101	100Ω 5% 0.062W
3925	4822 051 30102	1kΩ 5% 0.062W
3926	4822 051 30101	100Ω 5% 0.062W
3927	4822 051 30472	4.7kΩ 5% 0.062W
3928	4822 051 30472	4.7kΩ 5% 0.062W
3929	4822 051 30472	4.7kΩ 5% 0.062W
3930	4822 051 30472	4.7kΩ 5% 0.062W
3934	4822 051 30103	10kΩ 5% 0.062W
3935	4822 051 30333	33kΩ 5% 0.062W
3999	4822 051 30152	1.5kΩ 5% 0.062W
4006	4822 051 30008	Jumper 0603
4007	4822 051 30008	Jumper 0603
4009	4822 051 30008	Jumper 0603
4010	4822 051 30008	Jumper 0603
4146	4822 051 30008	Jumper 0603
4152	4822 051 30008	Jumper 0603
4158	4822 051 30008	Jumper 0603
4200	4822 051 30008	Jumper 0603
4250	4822 051 30008	Jumper 0603
4315	4822 051 30008	Jumper 0603
4325	4822 051 30008	Jumper 0603
4335	4822 051 30008	Jumper 0603
4381	4822 051 30008	Jumper 0603
4431	4822 051 30008	Jumper 0603
4500	4822 051 30008	Jumper 0603
4505	4822 051 30008	Jumper 0603
4506	4822 051 30008	Jumper 0603
4572	4822 051 30008	Jumper 0603
4574	4822 051 30008	Jumper 0603
4581	4822 051 30008	Jumper 0603
4591	4822 051 30008	Jumper 0603
4659	4822 051 30008	Jumper 0603
4794	4822 051 30008	Jumper 0603
4797	4822 051 30008	Jumper 0603
4800	4822 051 30008	Jumper 0603
4801	4822 051 30008	Jumper 0603
4810	4822 051 30008	Jumper 0603
4811	4822 051 30008	Jumper 0603
4834	4822 051 30008	Jumper 0603
4871	4822 051 30008	Jumper 0603
4874	4822 051 30008	Jumper 0603
4875	4822 051 30008	Jumper 0603
4884	4822 051 30008	Jumper 0603
4894	4822 051 30008	Jumper 0603

5008	4822 157 11074	Bead 600Ω at 100MHz
5140	4822 157 11074	Bead 600Ω at 100MHz
5164	4822 157 11074	Bead 600Ω at 100MHz
5196	4822 157 11074	Bead 600Ω at 100MHz
5197	4822 157 11074	Bead 600Ω at 100MHz
5198	4822 157 11074	Bead 600Ω at 100MHz
5199	4822 157 11074	Bead 600Ω at 100MHz
5300	4822 157 11074	Bead 600Ω at 100MHz
5302	4822 157 11074	Bead 600Ω at 100MHz
5352	4822 157 11074	Bead 600Ω at 100MHz
5520	4822 157 11074	Bead 600Ω at 100MHz
5521	4822 157 11074	Bead 600Ω at 100MHz
5522	4822 157 11074	Bead 600Ω at 100MHz
5523	4822 157 11074	Bead 600Ω at 100MHz
5524	4822 157 11074	Bead 600Ω at 100MHz
5530	4822 157 11074	Bead 600Ω at 100MHz
5541	4822 157 11074	Bead 600Ω at 100MHz
5570	3198 018 51090	10µH 10% 0603
5572	4822 157 11074	Bead 600Ω at 100MHz
5574	4822 157 11074	Bead 600Ω at 100MHz
5628	4822 157 11074	Bead 600Ω at 100MHz
5630	4822 157 11074	Bead 600Ω at 100MHz
5642	4822 157 11074	Bead 600Ω at 100MHz
5643	4822 157 11074	Bead 600Ω at 100MHz
5644	4822 157 11074	Bead 600Ω at 100MHz
5645	4822 157 11074	Bead 600Ω at 100MHz
5646	4822 157 11074	Bead 600Ω at 100MHz
5647	4822 157 11074	Bead 600Ω at 100MHz
5648	4822 157 11074	Bead 600Ω at 100MHz
5649	4822 157 11074	Bead 600Ω at 100MHz
5670	4822 157 11074	Bead 600Ω at 100MHz
5672	4822 157 11074	Bead 600Ω at 100MHz
5673	4822 157 11074	Bead 600Ω at 100MHz
5796	4822 157 11074	Bead 600Ω at 100MHz
5810	4822 157 11074	Bead 600Ω at 100MHz
5820	4822 157 11074	Bead 600Ω at 100MHz
5822	4822 157 11074	Bead 600Ω at 100MHz
5834	4822 157 11074	Bead 600Ω at 100MHz
5870	4822 157 11074	Bead 600Ω at 100MHz
5900	2422 549 43062	Bead 600Ω at 100MHz
5900	4822 157 11074	Bead 600Ω at 100MHz
5901	2422 549 43062	Bead 600Ω at 100MHz
5901	4822 157 11074	Bead 600Ω at 100MHz

6166	9322 149 96685	BZX384-C2V4
6302	4822 130 10654	BAT254
6310	4822 130 10654	BAT254
6311	4822 130 10654	BAT254
6354	9322 149 10685	BZM55-C33
6355	9322 149 10685	BZM55-C33
6356	9322 149 10685	BZM55-C33
6357	9322 149 10685	BZM55-C33
6365	9322 129 38685	BZM55-C6V8
6366	4822 130 83757	BAS216
6378	4822 130 83757	BAS216
6379	4822 130 83757	BAS216
6380	4822 130 11422	PLVA2650A
6388	4822 130 11422	PLVA2650A
6393	4822 130 11422	PLVA2650A
6399	4822 130 11422	PLVA2650A
6507	4822 130 83757	BAS216
6630	4822 130 10654	BAT254
6710	9322 149 10685	BZM55-C33
6711	9322 149 10685	BZM55-C33
6720	9322 149 10685	BZM55-C33
6721	9322 149 10685	BZM55-C33
6730	9322 149 10685	BZM55-C33
6731	9322 149 10685	BZM55-C33
6740	9322 149 10685	BZM55-C33
6741	9322 149 10685	BZM55-C33
6802	9340 260 20115	BAW56W
6805	9340 260 20115	BAW56W
6807	9340 260 20115	BAW56W
6820	4822 130 10654	BAT254
6900	9322 149 10685	BZM55-C33
6901	9322 149 10685	BZM55-C33
6902	9322 149 10685	BZM55-C33
6903	9322 149 10685	BZM55-C33
6904	4822 130 10654	BAT254
6905	4822 130 10654	BAT254
6906	9322 149 10685	BZM55-C33
6907	9322 149 10685	BZM55-C33
6908	9322 149 10685	BZM55-C33
6909	9322 149 10685	BZM55-C33
6910	9322 149 10685	BZM55-C33
6911	9322 149 10685	BZM55-C33
6912	9322 149 10685	BZM55-C33
6913	9322 149 10685	BZM55-C33
6914	9322 149 10685	BZM55-C33
6915	9322 149 10685	BZM55-C33
6916	4822 130 10654	BAT254
6918	9322 149 10685	BZM55-C33
6920	9322 149 10685	BZM55-C33
6921	9322 149 10685	BZM55-C33
6922	9322 149 10685	BZM55-C33
6923	9322 149 10685	BZM55-C33
6925	9322 149 10685	BZM55-C33

7007	5322 209 11598	PC74HCT4538T
7060	3198 010 42310	BC847BW
7065	3198 010 42310	BC847BW
7145	3198 010 42310	BC847BW
7148	3198 010 42310	BC847BW
7151	3198 010 42310	BC847BW
7154	3198 010 42310	BC847BW
7157	3198 010 42310	BC847BW
7160	3198 010 42310	BC847BW
7165	3198 010 42310	BC847BW
7170	9322 160 96671	AD9887KS-140
7175	4822 209 17239	LD1117DT33C
7303	4822 209 30212	PC74HCT125T
7308	3198 010 42310	BC847BW
7310	3198 010 42310	BC847BW
7311	9322 145 66668	TSH93ID

7315	3198 010 42310	BC847BW
7316	3198 010 42310	BC847BW
7318	3198 010 42310	BC847BW
7320	3198 010 42310	BC847BW
7321	3198 010 42310	BC847BW
7322	3198 010 42310	BC847BW
7323	3198 010 42310	BC847BW
7325	3198 010 42310	BC847BW
7326	3198 010 42310	BC847BW
7328	3198 010 42310	BC847BW
7340	4822 209 15765	74HC4052D
7341	3198 010 42310	BC847BW
7343	3198 010 42310	BC847BW
7352	9322 160 17668	ST202ECD
7360	3198 010 42310	BC847BW
7364	3198 010 42310	BC847BW
7370	4822 209 71585	74HCT4538N
7383	9352 684 81557	SAA5801H/015
7430	9322 156 81668	M24C32-WMN6TNKSA
7435	3198 010 42310	BC847BW
7500	9322 157 20668	MSM51V18165F-60J
7515	3198 010 42310	BC847BW
7516	5322 130 42756	BC857C
7517	9322 158 67685	ADM810TART
7530	4822 209 90188	PCF8591T
7540	5322 209 33172	PCF8574AT
7563	3198 010 42310	BC847BW
7570	9322 137 99668	FS6377-01
7574	9352 317 00118	74LVC125AD
7580	9322 156 81668	M24C32-WMN6TNKSA
7605	9322 158 73671	PW164-10R
7628	9322 164 75682	CY62126BVLL-70ZI
7631	3198 010 42310	BC847BW
7640	4822 209 16406	TL431ACD
7641	9322 157 95668	STD16NE06L
7655	9322 141 53682	EPC2LC20
7670	9322 159 45668	DS90C385MTD
7675	9340 547 13215	BSH103
7676	9340 547 13215	BSH103
7714	4822 209 30095	LM833D
7801	3198 010 42310	BC847BW
7802	3198 010 42310	BC847BW
7803	5322 130 42756	BC857C
7805	9340 547 13215	BSH103
7806	9340 547 13215	BSH103
7807	9340 547 13215	BSH103
7808	9340 547 13215	BSH103
7812	9322 167 63668	MSP3415G-QG-B8
7841	4822 209 30095	LM833D
7851	4822 209 30095	LM833D
7861	4822 209 30095	LM833D
7870	9322 167 76668	TC74HC590AF
7874	9322 167 76668	TC74HC590AF
7879	3198 010 42310	BC847BW
7880	9322 153 66668	CY7C199-15ZC
7881	9351 869 80118	74HCT573DB
7882	9351 869 80118	74HCT573DB
7900	5322 209 71568	PC74HCT14T
7904	9322 046 99668	ST24FC21M6
7907	9322 046 99668	ST24FC21M6
7910	4822 209 30212	PC74HCT125T
7915	3198 010 42310	BC847BW
7915	9340 217 70115	BC847BW

11. Revision List

First release